AD-A102 243 MISSISSIPPI STATE UNIV MISSISSIPPI STATE DEPT OF ANTH--ETC F/G 5/6
THE KELLOGG VILLAGE SITE INVESTIGATIONS, CLAY COUNTY, MISSISSIP--ETC(U)
SEP 80 J R ATKINSON, J C PHILLIPS, R WALLING DACW01-77-C-0015

UNCLASSIFIED NL

1 OF 4

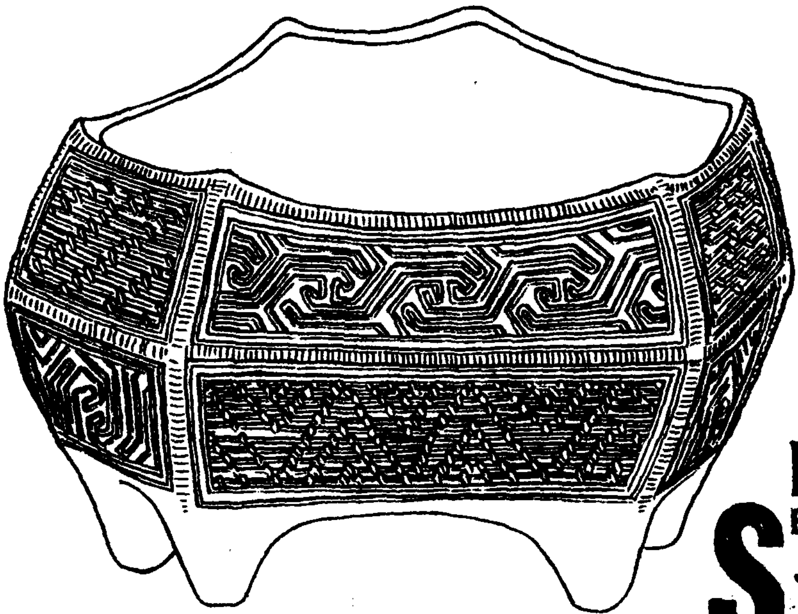
AD A
102243

LEVEL II

2

AD A102243

The Kellogg Village Site Investigations Clay County, Mississippi



DTIC
ELECTE
JUL 3 1 1981
S D
F

James R. Atkinson, John C. Phillips, and Richard Walling

Appendices by Robert I. Gilbert, Jr., Cathy J. Crane, Suzanne K. Fish, and Richard Rummel

DTIC FILE COPY

Department of Anthropology
Mississippi State University
September 1980

81 7 27 037

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER
N/A

2. GOVT ACCESSION NO.
AD-A102243

3. RECIPIENT'S CATALOG NUMBER

4. TITLE (and Subtitle)
The Kellogg Village Site Investigations, Clay County, Mississippi

5. TYPE OF REPORT & PERIOD COVERED
Archaeology

6. PERFORMING ORG. REPORT NUMBER
N/A

7. AUTHOR(s)
James R. Atkinson, John C. Phillips and Richard Walling

I. Gilbert

15

8. CONTRACT OR GRANT NUMBER(s)
DACW01-77-C-0015

9. PERFORMING ORGANIZATION NAME AND ADDRESS
Department of Anthropology
Mississippi State University
Starkville, MS

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
Cultural Resources Compliance

11. CONTROLLING OFFICE NAME AND ADDRESS
US Army Corps of Engineers
Mobile District
PD-EC, Mobile, AL

11

12. REPORT DATE
Sep[redacted]80

13. NUMBER OF PAGES
345

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)

12

15. SECURITY CLASS. (of this report)
unclassified

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

Available from National Technical Information Service, Springfield, VA 22161

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)
Cultural Resources
Archaeology
Tennessee-Tombigbee Waterway

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

over

411 400

DD FORM 1473 1 JAN 73 EDITION OF 1 NOV 65 IS OBSOLETE

unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

The Kellogg Village Site (22C1527), a multi-component site located in the Columbus (Mississippi) Lock and Dam area of the Tennessee-Tombigbee Waterway was excavated by the Department of Anthropology, Mississippi State University, during the summer of 1978. The project was sponsored under contract with the US Army Corps of Engineers, Mobile District.

A prolific data producer, the Kellogg site provided new as well as supportive data on most of the prehistoric cultures of the Upper and Central Tombigbee River. The 1 meter maximum cultural deposit provided valuable technological subsistence, housing, social, religious, interareal contact, and environmental data. Radiocarbon samples obtained have produced dates that have helped refine and/or refine suspected temporal positions of several components.

The earliest significant occupation on the site has been radiocarbon dated within the Middle Archaic period. In addition to this radiocarbon date, the discovery of a Middle Archaic cremation pit containing ground and polished stone grave goods was perhaps the most remarkable. For Woodland times, the discovery of two partial Alexander Incised vessels with hertofore unknown six pedal supports helped shed new light on that presently mysterious culture of the Early Woodland period. One of the vessels also had six sides, a vessel form never before encountered in North American archaeology. The first radiocarbon date ever obtained on this culture was enlightening in that it was over 200 years earlier than previous estimated for the Henson Springs Phase.

THE KELLOGG VILLAGE SITE INVESTIGATIONS
CLAY COUNTY, MISSISSIPPI

by
James R. Atkinson
John C. Phillips
and
Richard Walling

with
Appendices by
Robert I. Gilbert, Jr.
Cathy J. Crane
Suzanne K. Fish,
and
Richard Rummel

A report on work undertaken in cooperation with
the U.S. Army Corps of Engineers, Mobile District
in fulfillment of Modification Three to Contract
Number DACW01-77-C-0015

Department of Anthropology
Mississippi State University
September 1980

ACKNOWLEDGEMENTS

In the course of excavation, analysis, and report production during this project, a large number of people are owed a debt of gratitude. First, U.S. Army Corps of Engineers personnel in Mobile are extended thanks for selecting us to conduct the project and for their cooperative attitude when field and lab problems warranted flexibility in the best interest of the project.

Special thanks are extended to supervisory personnel of Folk Construction Company for their generosity in providing machinery and for following the excavations with interest. Isolated as we were from easy access by the public, their almost daily visits to the site were most appreciated.

In addition to the field and lab personnel mentioned in Chapter 1 of this report, special thanks are extended to other persons who provided assistance in the production of the report. These include Dr. Robert I. Gilbert, Jr. for conducting the human skeletal analysis, Arlene Fradkin for conducting the animal bone analysis, Cathy J. Crane for conducting the floral analysis, Suzanne K. Fish for conducting the pollen analysis, and Richard Rummel for conducting the shellfish analysis. In preparation of maps and/or drawings thanks are extended to Richard Walling, John C. Phillips, Ginger Flynn, Shaun Comfort, Richard Marshall, and especially to John W. O'Hear for graciously pitching in and helping his colleague get remaining maps and figures finished just before the final deadline.

Finally I am most appreciative of the patience and support displayed by Dr. John Peterson, Anthropology Department Head. I am also grateful to Dr. Janet Rafferty, Dr. Jack Wynn, and John W. O'Hear for reviewing the text and for their usually heeded suggestions. Finally, special thanks are extended to Barbara Seegraves, departmental secretary, and Christy Dixon, departmental secretary during the early part of the project, for typing the text and to Pat Hepner for typing most of the tables.

James R. Atkinson

James R. Atkinson, Principal
Investigator

TABLE OF CONTENTS

LIST OF PLATES

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

The Kellogg Village site (22Cl527), a multi-component site located in the Columbus (Mississippi) Lock and Dam area of the Tennessee-Tombigbee Waterway, was excavated by the Department of Anthropology, Mississippi State University, during the summer of 1978. The project was sponsored under contract with the U.S. Army Corps of Engineers, Mobile District.

A prolific data producer, the Kellogg site provided new as well as supportive data on most of the prehistoric cultures of the Upper and Central Tombigbee River. The 1 meter maximum cultural deposit provided valuable technological, subsistence, housing, social, religious, interareal contact, and environmental data. Radiocarbon samples obtained have produced dates that have helped refine and/or confirm suspected temporal positions of several components.

The earliest significant occupation on the site has been radiocarbon dated within the Middle Archaic period. In addition to this radiocarbon date, the discovery of a Middle Archaic cremation pit containing ground and polished stone grave goods was perhaps the most remarkable. For Woodland times the discovery of two partial Alexander Incised vessels with heretofore unknown six podal supports helped shed new light on that presently mysterious culture of the Early Woodland period. One of the vessels also had six sides, a vessel form never before encountered in North American archaeology. The first radiocarbon date ever obtained on this culture was enlightening in that it was over 200 years earlier than previous estimates for the Henson Springs phase.

The Miller periods II and III were represented at Kellogg by several pit features which produced valuable technological, subsistence, and seasonality of occupation data. The presence of sturgeon bones in a few of these features, for example, indicates that the site was occupied not only in the fall and winter, but also in the spring when that normally salt water fish swims upstream to spawn. Radiocarbon dates

combined with feature assemblages also have provided data that supports previous chronological refinements for the Miller II and III periods.

With regard to the Mississippian component at Kellogg, the data provided by numerous burials and other pit features have shed both new and confirmatory evidence on that culture. The ceramics recovered, for example, all fall into the suspected early part of the period, Moundville I, and two radiocarbon dates fall within the estimated time span for Moundville I, A.D. 1000 to A.D. 1250. Other cultural manifestations and artifacts of the Kellogg Mississippian population show a strong relationship with those of other Mississippian populations in adjacent and nearby river valleys to the east.

No evidence was found for a post-Moundville I prehistoric occupation but an apparent 19th century log cabin or frame house apparently existed there for a time. Thereafter the site lay unoccupied and undisturbed except for cultivation activities until archaeological testing occurred in 1974, the major excavation in 1978, and the removal of all but a small portion of it in construction of the Waterway canal.

I. INTRODUCTION

This report is the final requirement of a contract negotiated between the U.S. Army Corps of Engineers, Mobile District and the Department of Anthropology, Mississippi State University for archaeological investigations of the Kellogg Village site (22C1527). The Kellogg site (Plates 1, 2), a long-utilized prehistoric Indian occupation site, was partially located on the path of a Tennessee-Tombigbee Waterway channel cut-off extending north from the Columbus (Mississippi) Lock and Dam. The site lay about 3.3 kilometers north of the lock and dam and on the west bank of the Tombigbee River (see Figure 1). Construction of the channel cut-off had begun in late August 1978, shortly before field investigations got underway. By the time the field excavations were completed on September 16, most of the channel had been excavated. The site was circumvented and partially pedestaled by the construction company while the excavations proceeded. Two days after the excavation time expired that part of the site located within the channel right-of-way was removed with earthmovers and bulldozers. By the end of April 1979, most of the remainder of the site had washed away due to river flooding.

The Kellogg site was recorded and reported by Rucker (1974) during a cultural resources survey of the Aliceville and Columbus Lock and Dam areas. The immediate site area appeared as a gently rounded knoll extending away from the edge of the Tombigbee River. Measuring about 80 x 60 m (87x65 yards) in size, the site was surrounded by second growth mixed hardwood timber. Because of its higher elevation than the surrounding low land of the floodplain, the entire site was under cultivation at one time and was afterwards kept partially free of trees for use as pasture. A barbed wire fence bisected the site in an east-west direction; the north side of the site was cleared and in pasture and the south side of the site was covered by bushes and mostly small trees. A woods road crossed the site along the edge of the river (see Figure 3).

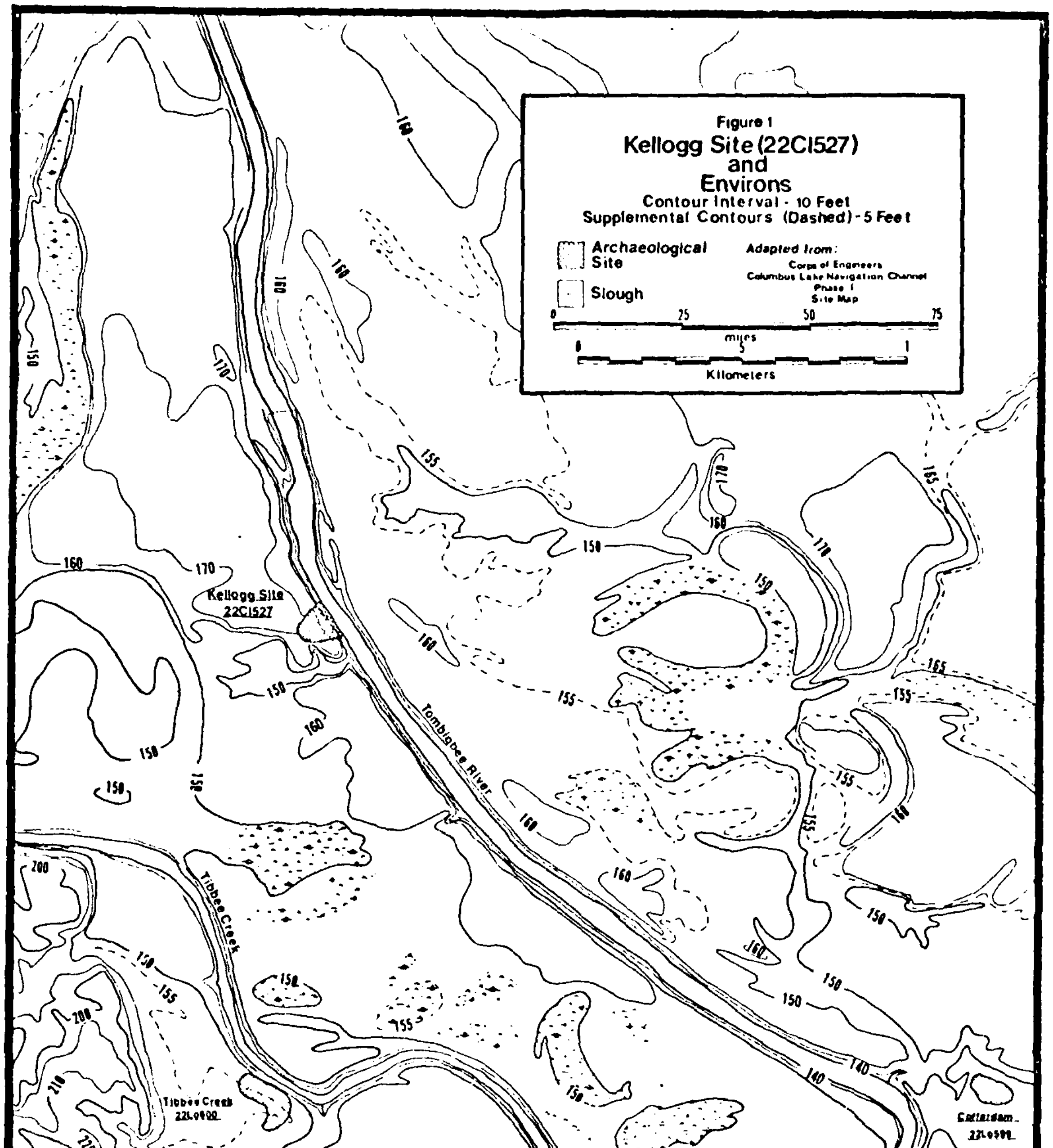


Figure 1
Kellogg Site (22CI527) and Environs
Contour Interval - 10 Feet
Supplemental Contours (Dashed) - 5 Feet
Archaeological Site
Slough
Adapted from:
Corps of Engineers
Columbus Lake Navigation Channel
Phase I
Site Map
0
25
50
75
miles
0
.5
1
Kilometers
Kellogg Site
22CI527
Tombigbee River
Tibbee Creek
Tibbee Creek
22Lo600
Cofferdam
22Lo599

Rucker (1974:104) dug a small test hole in the cleared area north of the fence and determined that a cultural deposit of about 80 centimeters existed. Following Rucker's recommendations for the site, testing was conducted the following year by Blakeman (1975) and three 2 x 2 m test units were placed in the pasture north of the fence. The test excavations indicated that the initial prehistoric occupations of the site had occurred during the Archaic period. The cultural deposit was found to be 90 cm deep at the maximum in the area investigated and all but the first 30 cm was attributed to Archaic occupations. The post-Archaic components included Transitional Archaic-Woodland, Early Woodland, Middle Woodland, Late Woodland, Mississippian, and 19th century historic. Nine features were discovered in the three test squares; the most notable were a Mississippian period post mold which produced charcoal that was later radiocarbon dated at A.D. 1189±87 and a Miller III (Late Woodland) pit containing large sherds and some shellfish remains. No burials or house patterns were discovered during the testing (Blakeman 1975:36,39). Blakeman's conclusions about the site as indicated by the testing were as follows:

> It is clear from the distribution of the artifacts in the midden that the site was occupied over an extended period of time from an Archaic settlement on the sterile clay up through the late prehistoric period. Furthermore, the presence of large quantities of European materials suggests that a historic house may also have been located on the site. It is clear from the depth of the sterile soil in the 2 higher squares that the site was initially relatively level and that the mounding indicated on the contour map has resulted from an accretional buildup of occupational debris. There is no indication that the mounding was in any way related to the covering of burials. Although several features were identified, all but one of these originated in the disturbed upper 20 cm of the site and only one was datable. Because of the very limited horizontal distribution of the occupation area it is suggested that the site was a multi-component campsite. Furthermore, the floral analysis indicates that the occupation was probably seasonal and that the site was not cleared of tree cover during the occupation. However, the midden was so mixed, and the extent of the excavations was so limited that little can be said of the actual site layout. The presence of shell in the upper 20 cm of 2E6N may indicate that the later occupation of the site was oriented toward

> the collection of freshwater mussels from the Tombigbee while the earlier occupations were not concentrating on this specific resource. (Blakeman 1975:38-39).

As mentioned above, Rucker's test hole and Blakeman's test squares were all placed on the north side of the fence row in the cleared pasture. Thus, the south half of the site remained uninvestigated. In his report on the Kellogg site testing, Blakeman (1975) made no recommendations for or against further investigation. During a subsequent cultural resources survey conducted in 1976, however, the site was revisited and a single shovel hole was placed in the uninvestigated wooded portion south of the fence line. This hole revealed that a more intact cultural deposit existed in that area than was present on the north side of the fence. The site was addressed again in the report on that survey and further archaeological excavations were recommended (Atkinson 1978:123). In early 1978 the site was visited by Jerry Nielsen, archaeologist with the U.S. Army Corps of Engineers, Mobile District; soon thereafter preparations were begun by the Corps to salvage the site prior to construction slated for the coming fall.

The recent investigations as specified in the Scope of Work issued by the Corps of Engineers, Mobile District, had a two-fold purpose: to recover archaeological data on the cultural components present and to test various archaeological recovery techniques. The several recovery techniques utilized at the Kellogg site are discussed in Chapters IV and IX and the cultural data recovered are discussed in Chapters V through VIII.

The site was excavated under the direction of the senior author, as Principal Investigator, with a field crew that varied in number between seven and ten persons. G. Gerald Berry, Jr. served as field director and Richard Walling served as field assistant. The crew members were John C. Phillips, Jeanie Allan, Caroline Albright, Floyd D. Kent, Dean Wilson, Susan Boyd, Meg Flynn, Robert White, and Grady Wright. During the analysis following the field work, Berry served as lab director and Walling served as lab assistant. Phillips served throughout the analysis period as a lab aide and White worked part-

time. Other part-time lab aides included Roberta Avila, Jenny Bonner, Adele Crudden, and Craig Vechorik.

II. ENVIRONMENTAL SETTING

The Kellogg Village site was located on the west bank of the Tombigbee River, in Clay County, Mississippi. It is one of a series of similar prehistoric sites located in the immediate vicinity of the Columbus Lock and Dam (Figure 1). These sites are characterized by moderately deep cultural deposits containing components ranging from Archaic to Mississippian. The upper portions of the middens contain large quantities of mussel shells, much of which can be attributed to intensive Late Woodland occupations. The Cofferdam site (22Lo599), located about 2.5 km south of the Kellogg site on the south side of an extinct channel of the Tombigbee River (Figure 1), was occupied during the latter half of the Archaic, the Transitional Archaic-Woodland (Gulf Formational), the Early Woodland, the Middle Woodland, the Late Woodland, and the Mississippian periods (Blakeman, Atkinson, and Berry 1976). These same components were present at the Tibbee Creek site (22Lo600), which was located about 1.5 km south of the Kellogg site on the south bank of Tibbee Creek (O'Hear _et al_. 1979). Excavated but not reported is the Shell Bluff site (22Lo530) which had materials diagnostic of these same cultural periods, as indicated by surface collections and an exposed natural vertical profile on the river bank (Rucker 1974:93). This site is located about .8 km south of the Cofferdam site and is also situated on the east bank of the river. Excavations of this site were conducted in 1979.

All four sites are similar physiologically in that they are or were situated on the immediate edge of the river or creek at an elevation of 150' MSL. All four sites, however, are still low enough to become innundated periodically during flooding. Their presence in an area subject to innundation indicates that they were chosen for occupation because of a significant reliance on the food resources of

the Tombigbee River. The large quantities of mussel shells in the upper portions of the midden is a good indicator that foods provided by the river influenced site locations during the latter part of the prehistoric occupation, at least.

Because the Kellogg site was on the edge of the Tombigbee, it seems likely that the course of the river in that locality has remained stable during the several thousand years of occupation. As mentioned above, the only one of the four related sites that was not on the immediate bank was the Cofferdam site. It was, however, located on the immediate edge of an extinct channel, so that site was probably abandoned by the river after about A.D. 1000 (Blakeman, Atkinson, and Berry 1976:).

The Kellogg site and the others mentioned above are located in a physiographic area known as the Black Prairie; the name is derived from the rich, black soil of the zone. The Black Prairie zone is about 30 to 40 km (20 to 25 miles) wide and extends from Alcorn County on the Tennessee border in the north to Noxubee County in the south; it then turns eastward into Alabama (Figure 2). The Black Prairie physiographic zone is relatively flat and historically has been devoid of trees in many areas. As they generally are today, the low bottomlands were undoubtedly forested.

The present natural vegetation of the prairie, and the river and creek bottomlands within it, includes a broad range of plant life. The deeper soils of the prairie support red cedar, overcup oak, shumard oak, green ash, durand oak, laurel oak, and hickory. The open areas of the prairie where the soil is thin contains species of prairie sunflower, prairie cornflower, prairie rose, Cherokee sedge, tuberus milkweed, prairie clover, and big bluestem grass (Thomas 1974:20). The bottomlands contain cypress, typelo gum, cherrybark oak, swamp chestnut oak, water oak, willow oak, sweetgum, sugar maple, and various elms (Miller and others 1973:15).

The prairie and its bottomlands also support a broad range of fauna. Major animals present include deer, squirrel, rabbit, turkey, raccoons, opossum, red and grey foxes, beaver, muskrat, and mink

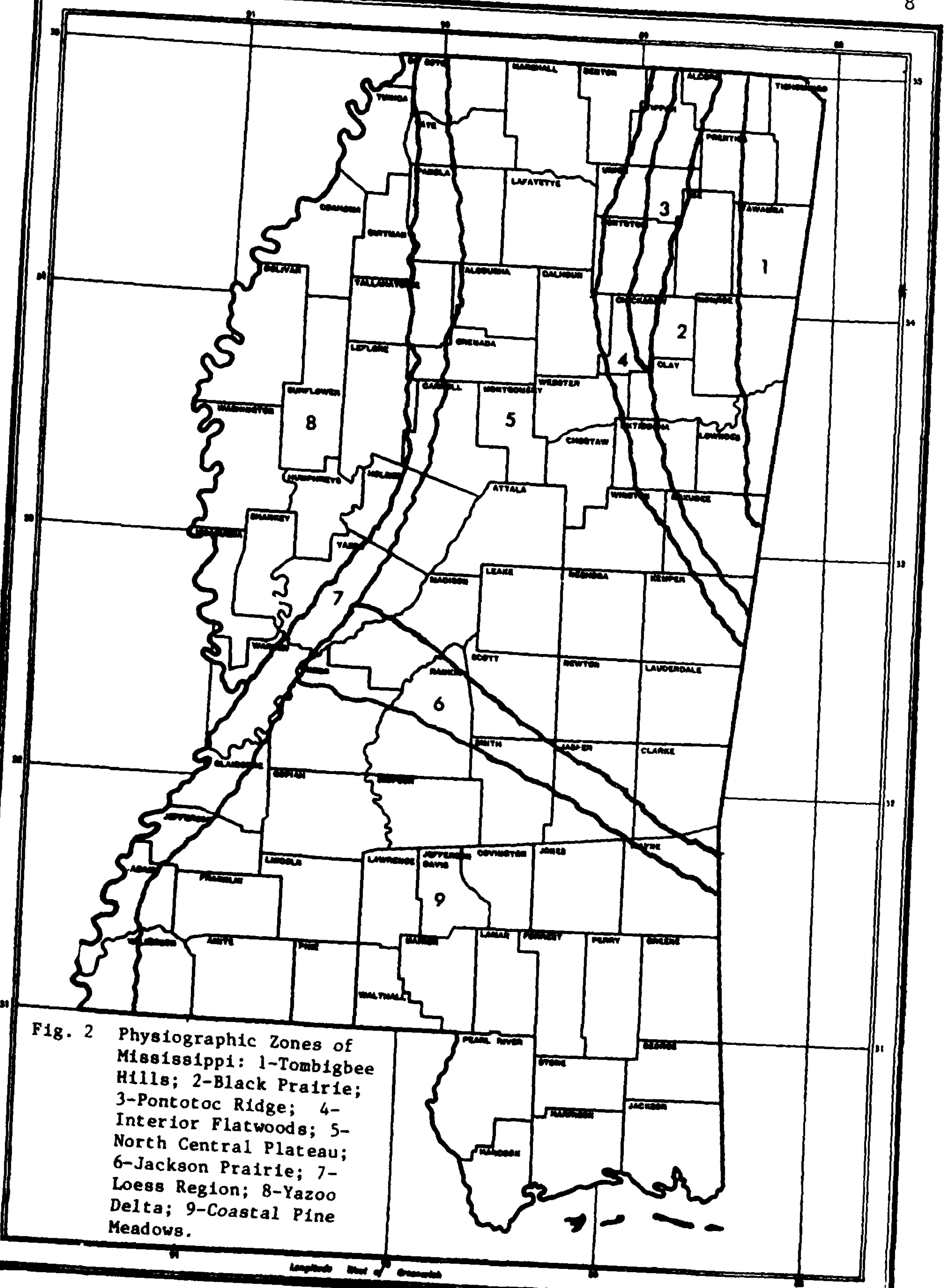


Fig. 2 Physiographic Zones of Mississippi: 1-Tombigbee Hills; 2-Black Prairie; 3-Pontotoc Ridge; 4-Interior Flatwoods; 5-North Central Plateau; 6-Jackson Prairie; 7-Loess Region; 8-Yazoo Delta; 9-Coastal Pine Meadows.

(Miller and others 1973:51; Rucker 1974:8). Animals which do not presently inhabit the area but whose bones occur in the archaeological record include bear, cougar, and alligator. It seems quite possible that woodland bison once inhabited the open grasslands of the prairie but archaeological evidence for their presence is inconclusive; a tooth and fragments found at the Bynum Mounds (Cotter and Corbett 1951: 49) are the only bison remains found to date but they did not necessarily come from an indigeneous animal of that bovine species. The rivers, creeks, and oxbow lakes of the prairie zone support numerous species of fish, shellfish, and turtles and provide feeding areas for game birds such as ducks and geese.

The modern climate of the area is characterized by relatively mild temperatures ranging from an average of 7.8°C (46°F) in January to 26.8°C (80°F) in June. The growing season is approximately 222 days in length, ranging from about March 25 to November 2. Average annual precipitation is 129 cm (51.75"), with the wettest month being March and the driest month September (Blakeman, Atkinson, and Berry 1976:6). Climatic conditions, of course, have not remained stable over the millenia and present conditions cannot be used to draw conclusions about relationships between the environment and cultural manifestations. This problem will be addressed further in Chapter VII.

III. SUMMARY OF THE CULTURAL PERIODS OF THE CENTRAL AND UPPER TOMBIGBEE RIVER VALLEY

Refined identification of prehistoric and historic Indian cultures of the Upper Tombigbee River Valley began in the late 1930's with Jesse D. Jennings' and Albert Spaulding's investigations of sites along the then proposed route of the Natchez Trace Parkway (Jennings 1941, 1944). Their excavations led to the first formalized typology and cultural period identifications for the post-Archaic period. Based partially on ceramic styles and tempering techniques, the Woodland occupations were given the names Miller I, Miller II, and Miller III. Jennings' typologies and cultural periods were subsequently used by Cotter and Corbett (1951) in their excavations of the Bynum Mounds, also located on the route of the Natchez Trace Parkway. Jennings' identifications are still generally accepted but refinements and alterations have since been made as a result of increased archaeological investigations during the 1970's (Nielsen and Jenkins 1973; Rucker 1974; Jenkins 1975, 1979; Jenkins, Curren and DeLeon 1975; Blakeman 1975, 1976; Blakeman Atkinson and Berry 1976; O'Hear and Conn 1977; O'Hear et al. 1979).

Recently, Jenkins (1979) reported his ceramic study of the Central Tombigbee River Valley materials excavated from sites in the Gainesville Lake area in Alabama. His objective was to obtain a more precise temporal control through ceramic identification in order to allow adequate characterizations of cultural systems based on integrated analysis of the major classes of data, such as ceramic, lithic, floral, faunal, and osteological (Jenkins 1979:1). His general strategy in constructing a more refined ceramic chronology is stated thusly:

> (1) to analyze using a type-variety nomenclature, all sherds which will not pass through a ½ inch mesh. Those ceramics which do pass through the ½ inch mesh are counted or weighed by temper group (2) to seriate selected pit features into a relative sequence (3) place the seriation in the context of an absolute temporal framework by C-14 dating of selected

features (Jenkins 1978:1).

In conjunction with Jenkins' refined ceramic chronology, Ensor (1979) has also reported his current lithic study of the Archaic and post-Archaic periods. These recent reports and earlier reports on the Upper and Central Tombigbee River cultures are used in the discussion below.

The Paleo-Indian Period (ca. 14,000 B.C.-8,000 B.C.)

The Paleo-Indian period has not been adequately defined for the Tombigbee River Valley, but habitations during the period are evidenced by the occasional recovery of spear points such as the Clovis and Quad (Bense 1979, personal communication). Known Paleo-Indian cultural remains usually lie very deep within multi-component sites and other Paleo-Indian sites are probably concealed by naturally deposited overburden. This period, therefore, awaits more specialized studies than have been undertaken in the past; at this writing such a study is being conducted.

During the Paleo-Indian period subsistence was apparently oriented in part to the hunting of large and small game animals by bands of nomadic hunters. The Paleo-Indian diet undoubtedly also included wild plant foods but little evidence of this has been found in the archaeological investigations conducted. The large animals, such as the mastadon, eventually became extinct. Smaller animals such as deer continued to be hunted and probably more reliance on the collection of wild plant foods occurred, giving rise to the archaeological period known as the Archaic.

The Archaic Period (ca. 8,000 B.C.-1,000 B.C.)

By 8,000 B.C. the big game animals were gone and the inhabitants of the Tombigbee Valley were less mobile than before. Their subsistence became oriented toward hunting and trapping of the smaller animals we know today, such as deer, turkey, raccoons, and opossums. Occupation of sites on a temporary or seasonal basis was practiced in order to exploit the particular resources available nearby. This new subsistence included in addition to hunting, gathering plant foods and catching aquatic animals from the rivers and creeks. Because of

movement from site to site throughout the year, substantial shelters were not often constructed.

Lithic technology during the Archaic period is characterized by adaptation to the small size of local cobbles which were typically percussion flaked to form generalized bipolar tools without heat treatment. The local chert tool assemblages reflect low morphological diversity but heat treated or exotic materials were often utilized in the manufacture of specialized tools (Ensor 1978:10-11, 1979).

In the Upper and Central Tombigbee Valley a large number of Archaic sites have been recorded and some have been subjected to archaeological excavations. The Hester site in Monroe County, Mississippi, has yielded significant data on the Early Archaic period (Brookes 1979). In the Gainesville Lake area Early and Late Archaic components have been found in the sandy lower levels of multicomponent sites such as 1Gr1, 1Grx1, and 1Gr2 (Nielsen and Moorehead 1972; Jenkins 1975). Significant quantities of Middle Archaic materials, however, have not been found in the Gainesville Lake (Jenkins 1978). The excavated Archaic components are described as "small transitory camps with a limited lithic assemblage indicative of a small hunting group" (Jenkins, Curren, and DeLeon 1975:183). Bone preservation in the acidic sands of these sites is normally non-existent but the predominance of lithic tools associated with hunting and butchering activities (dart points, cutting tools, scrapers) indicates the importance of hunting activities (Jenkins, Curren, and DeLeon 1975). In addition large quantities of hickory nut shells have been recovered, suggesting "that hunting was supplemented by the procurement of nut foods" (Jenkins, Curren, and DeLeon 1975:183).

Further north in the Mississippi portion of the Tombigbee valley a number of deep, Archaic midden mounds occur, several of which have been tested during the last seven years. Perhaps the most intriguing of these is the Vaughn Mound site (22Lo538), located just south of Columbus, Mississippi (Rucker 1974; Atkinson 1974). This mound at its

apex consisted of a 2 m deep deposit of dark, organic soil, all but the top 30 cm of which accumulated during the Middle and Late Archaic periods. In the lower half of this accretional mound were numerous Middle Archaic burials, as indicated by the discovery of eight skeletons in four 1 x 1 m test squares. Bones from two of the skeletons produced adjusted radiocarbon dates of 4660±95 B.C. and 3880±85 B.C. Some of these burials, including the one which yielded the former radiocarbon date above, had been placed on or slightly into the sand at the base of the midden and apparently mounded over to a height of between 45 and 70 cm (see Atkinson 1974:146-149, Plates 10, 11, and Figure 3).

Another similar deep Archaic accretional mound tested and reported in the Mississippi portion of the Tombigbee River is 22Lo564, the Barnes Mound (Blakeman 1974). This accretional mound possessed a dark organic midden to a depth of over 2 m but, unlike the Vaughn Mound, only two burials were encountered and no evidence of intentional mounding was in evidence. However, the lowest levels of this site produced projectile points of Early Archaic affiliation (Blakeman 1974: 88-89). A third accretional mound recently tested (Rafferty et al. 1979) is the East Aberdeen site (22Mo819), which is quite similar to the Barnes Mound in that a dark organic midden extended to a depth of over 2 m. Like the Barnes Mound, burials were rarely encountered and lithic material ranged from Early Archaic at the bottom to Late Archaic in the upper levels. Very recently several other deep midden mounds in the Mississippi portion of the river have been tested, one of which produced, in addition to Archaic materials, a Quad point of Late Paleo-Indian affiliation (Bense 1979, personal communication). Two other previously tested sites with considerably shallower deposits (ca. 1 m) include the Kellogg Mound site (22Cl528) and the site reported here, the Kellogg Village site (Blakeman 1974). Although the Archaic cultural deposits of these two sites were thinner and the soil not as consistently organic in nature as those discussed above, both were initially occupied over 6000 years ago as indicated by lithic material recovered and radiocarbon dates obtained (see Blakeman 1974:95 and radiocarbon dates discussion below in this report). These latter two sites are

more similar to the transitory camps investigated in the Gainesville Lake in that they do not seem to have been as consistently and intensively occupied as the Vaughn Mound, Barnes Mound, and East Aberdeen sites. Jenkins, Curren, and DeLeon (1975:186) have suggested that the extremely deep organic midden sites such as Vaughn and Barnes may represent Middle and Late Archaic base camps rather than transitory camps but that both types were probably a part of the same settlement system, which was quite similar to the "central-based wandering" system described by Beardsley (1955):

> . . . a community that spends part of each year wandering and the rest at a settlement or 'central base', to which it may or may not consistently return in subsequent years.

The Gulf Formational Period (ca. 2,000 B.C.-100 B.C.)

By 2,000 B.C. the inhabitants of the southeast were making pottery, an innovation which marks the end of the Archaic. This first pottery, known in the Tombigbee Valley as the Wheeler series, was tempered with plant fibers. This local expression of the southeastern fiber tempering tradition has been named the Broken Pumpkin Creek phase, with estimated duration between 1,000 B.C. and 500 B.C. (Jenkins, Curren, and DeLeon 1975:8). When the several radiocarbon dates of ca. 2,500-2,000 B.C. on fiber tempered ceramics from the coastal areas of Georgia and South Carolina (Stoltman 1966) are considered, however, Jenkin's estimate of 1,000 B.C. for the introduction of this early pottery tradition to the Tombigbee could be too late. A single corrected radiocarbon date of 2150±226 B.C. on charcoal from a Cofferdam site pit containing both Wheeler ceramics and the succeeding Alexander Series ceramics (Blakeman, Atkinson, and Berry 1976:65, 107) tends tentatively to support an earlier beginning date for the Broken Pumpkin Creek phase. In any case, there is presently no evidence that overall cultural patterns during this phase were significantly different than those of the Late Archaic period (Blakeman 1976; Jenkins, Curren and DeLeon 1975: 187; Ensor 1978:11).

The late part of the Gulf Formational period has been called the Henson Springs phase (Jenkins, Curren and DeLeon 1975). At the present time this phase is identified almost entirely on the basis of ceramics.

By about 500 B.C. the fiber tempered pottery had apparently been replaced by the more elaborately decorated sand tempered Alexander Series ceramics, but present evidence indicates no significant alterations of other tangible cultural manifestations, such as lithic technology, subsistence, and settlement patterns (Blakeman 1976: 51; Jenkins, Curren and DeLeon 1975:188; Ensor 1978:12). It should be kept in mind, however, that we presently have no evidence from either the Broken Pumpkin Creek or Henson Springs phases regarding such cultural aspects as structure types and burial customs. Future investigations hopefully will produce new data on both phases so that more comprehensive comparisons can be made of overall cultural patterns.

The Alexander pottery, which often has podal supports, includes the main types Alexander Incised, Alexander Pinched, Columbus Punctated and O'Neal Plain. These types occur from the Gainesville Lake in the south to the headwaters of the Tombigbee River in Tishomingo County, Mississippi; further north and east, the Alexander Series pottery is common in the western Tennessee Valley where it was first defined by Haag (1942). By about 100 B.C. the Alexander ceramics were either dominated by or had been completely replaced by the decorated sand tempered types Saltillo Fabric Impressed and Furrs Cordmarked, which characterize the succeeding Miller I period. Jenkins (1978:6) contends that Alexander ceramics were no longer being made by 100 B.C. but left unanswered is the question of why such artistic pottery lost popularity in favor of fabric impressed and cordmarked pottery. Was the Late Henson Springs population decimated and replaced by intruding groups from elsewhere or did the local population gradually cease the manufacture of incised pottery? Future research will undoubtedly answer the questions surrounding the demise of the Alexander ceramic making tradition.

Miller I Period (ca. 100 B.C.-A.D. 300)

This period is represented ceramically by the sand tempered types Saltillo Fabric Impressed, Furrs Cordmarked, and Baldwin Plain. Furrs Cordmarked was a minority type during the earlier part of the period but it gradually increased in frequency until it predominated over

Saltillo Fabric Impressed at the end of the period. These types are found in direct association with pottery diagnostic of the Porter Hopewell complex of the Mobile Bay area and the Marksville period of the Lower Mississippi Valley (Bohannon 1972; Phillips 1970; Jenkins 1975; Cotter and Corbett 1951). As in the Porter Hopewell/Marksville periods, artificial burial mounds were constructed during the Miller I period. The Miller I people were participating in what has been termed the "Hopewellian Sphere of Interaction" (Caldwell 1964). This interaction involved widespread trade and eventually led to basically similar cultural manifestations over a large area from Ohio to the Gulf Coast. In the Upper and Central Tombigbee Valley the results of the interaction are most evident in the Hopewellian burial mound complex, other associated mortuary practices, and the occurrence of materials traded from other areas (Cotter and Corbett 1951; Bohannon 1972).

Because the Hopewellian influences seem to appear well into the ceramically defined Miller I period, Blakeman, Atkinson, and Berry (1976:27) applied the phase name Bynum to the Hopewellian interaction time span of Miller I, from about A.D. 1 to A.D. 200. The earlier part of Miller I, therefore, had the same local ceramics as the Bynum phase, but lacked the Hopewellian cultural traits of that phase.

Jenkins (1979:258-259) has recently divided the Miller I period, which he calls the Miller I phase, into three subphases named Bynum, Pharr, and Craig's Landing. As mentioned above, Blakeman, Atkinson, and Berry (1976:37) had already identified and named the Bynum phase but for reasons unknown Jenkins replaced this phase name with the name Pharr, but identified it exactly the same as did the former investigators. He then re-designated the Bynum phase as the early part of the Miller I period, from 100 B.C. to A.D. 1. The reasoning behind this name manipulation of an established phase is somewhat mystical; it would have been simpler to have left the Bynum phase alone and given a different name to the early part of Miller I, especially since he changed nothing but the name. In any case, the early part of the Miller I period (ca. 100 B.C.-A.D. 1), as described by Blakeman, Atkinson, and Berry (1976),is characterized by the domination of Baldwin Plain and

Saltillo Fabric Impressed ceramics.

Jenkins' third proposed division of Miller I, the Craig's Landing phase, is estimated to date from A.D. 200 to 300. During this phase Furrs Cordmarked is considered a major type but was still dominated by Saltillo Fabric Impressed. Ceramic associations with Marksville Stamped, variety Manny and Marksville Incised indicate that the Craig's Landing phase was contemporary with the Late Marksville period centered in the Lower Mississippi Valley (Jenkins 1979:259), where it has been dated between A.D. 200 and 400 (Toth 1974).

Although the evidence is incomplete a new stone technology probably began during the Miller I period. The evidence, derived from excavation in the Gainesville Lake, indicates that Miller I people may have used heat treatment as a basic part of their adaptation to local chert materials. For certain, heat treatment was common during the Miller II and III periods when heat treatment to reduce cobbles for tool manufacture was pronounced (Ensor 1979:306).

Subsistence during the Miller I period appears to have depended greatly on a specialized forest economy based on hunting and the collection of plant foods, especially nuts; shellfish collecting became more pronounced than in the earlier Henson Springs phase. Although a corn cob was found in the "Miller I zone" at site 1Gr2, it was probably intrusive from the "Mississippian zone" above (Jenkins, Curren, and DeLeon 1975:190).

The Miller II Period (ca. A.D. 300-600)

The Miller II period is characterized as the period in which Furrs Cordmarked ceramics predominated and eventually replaced Saltillo Fabric Impressed pottery. Burial mound construction continued but on a modified basis, and a sharp decrease in trade goods indicates that the people were no longer participating in the Hopewellian Interaction Sphere (Bohannon 1972; Jenkins 1975:188).

Jenkins (1979:259-260) has divided Miller II into two subphases, Early Miller II (not named) and Late Miller II (the Turkey Paw phase). Early Miller II (ca. A.D. 300-450) is characterized by Jenkins as having a ceramic assemblage consisting of a predominance of Furrs

Cordmarked over Saltillo Fabric Impressed but with plain ceramics predominating over the latter. The Late Miller II subphase (ca. 450-600) is characterized by a predominance of plain pottery and a very low frequency of Furrs Cordmarked. Withers Fabric marked and a "narrow dowell" variety of Saltillo Fabric Impressed, named variety China Bluff, predominated over Furrs Cordmarked. In addition, large sand tempered loop handles have been identified in the Late Miller II assemblages from the Gainesville Lake area. Grog tempered pottery, most of which was plain, also came into use and eventually predominated in the Late Miller II subphase. Minority pottery included limestone and bone tempered types. At the L.A. Strickland site in the extreme northern portion of the Tombigbee a Miller II component radiocarbon dated at A.D. 560 and A.D. 715 was void of grog tempered ceramics (O'Hear and Conn 1977:39,43). This circumstance has prompted Jenkins (1978:9) to speculate that grog tempering did not reach the Tennessee Valley and extreme upper portion of the Tombigbee until at least 100 years after its appearance in the Central Tombigbee Valley. Recently, he has further suggested that the component is actually Early Miller III rather than Late Miller II, in spite of the absence of clay tempered pottery (Jenkins 1979:265).

Jenkins has also identified three rare grog tempered ceramic types in Late Miller II, Gainesville Complicated Stamped, Yates Net Impressed, and Wheeler Check Stamped (Jenkins 1979:262). In addition, numerous non-local ceramics were present, including Mulberry Creek Plain, Wright Check Stamped, and Pickwick Complicated Stamped, all of which are common in northern Alabama; associated non-local ceramics commonly occurring in southern Alabama include McLeod Check Stamped, McLeod Simple Stamped, Mound Field Net Marked, Weeden Island Red, and Swift Creek Complicated Stamped (Jenkins 1979:260).

In regard to other cultural configurations there seem to have been significant changes from Miller I. Ensor (1978:13) states that a major change in lithic technology had occurred in that thermal reduction had begun to replace bipolar flaking. He also states that medium-large straight to contracting stemmed projectile points with tapered

shoulders were produced, most of which were heat treated; over 80% of the debitage is believed to have been derived from cobbles heated prior to flaking (Ensor 1978:15; 1979:306).

The Miller III Period (ca. A.D. 600-A.D. 1100)

This Late Woodland period is defined ceramically by the presence of major grog tempered pottery types previously known as Tishomingo Cordmarked, Tishomingo Plain, and Gainesville Fabric Impressed (Jennings 1941; Jenkins, Curren, and DeLeon 1975:19). Under Jenkins' (1979) new type variety system, these three types are referred to as Mulberry Creek Cordmarked, Baytown Plain, and Withers Fabric Marked; these names will be used hereafter in this report.

Based on data recovered from the Cofferdam site, Blakeman, Atkinson, and Berry (1976:42) defined a phase within the Miller III period. Named the Cofferdam phase, it is described as follows:

> Our data indicates that the Cofferdam Phase dates to the third quarter of the first millennium A.D.; that these people made relatively heavy use of the river mussels available in the local waterways; that they either cultivated themselves or had contact with groups which cultivated corn; that they dug large, bell-shaped storage pits; and that a common mortuary practice involved burial of individuals in a partially flexed position in these pits when they were partially filled with refuse (Blakeman, Atkinson, and Berry 1976:42).

Recently Jenkins (1979) has further divided Miller III into three subphases. He designated the Cofferdam phase described above as the Middle Miller III subphase. His Early Miller III, the Vienna subphase, is characterized by a predominance of grog tempered ware over sand tempered ware. Most of the grog tempered material is Baytown Plain and Mulberry Creek Cordmarked followed by Withers Fabric Marked, Wheeler Check Stamped, Yates Net Impressed, and Alligator Incised. The majority of the sand tempered ceramics are Baldwin Plain, followed by Furrs Cordmarked and a small occurrence of Saltillo Fabric Impressed, variety China Bluff (Jenkins 1979:264). Jenkins (1978:9) initially estimated Early Miller III to date between A.D. 700 and 800 but Gainesville Lake radiocarbon dates received later indicate to him that Early Miller III probably dates between A.D. 600 and 900

(Jenkins 1979:265-266).

Jenkins' Middle Miller III, or Cofferdam subphase, is characterized by Mulberry Creek Cordmarked being the predominant ceramic type, followed by Baytown Plain and Withers Fabric Marked; sand tempered types are not definitely in evidence (Jenkins 1979:266-267). Other cultural aspects of the Cofferdam phase, as defined by Blakeman, Atkinson, and Berry (1976:42), have been presented above.

Jenkins' Late Miller III, or Catfish Bend subphase, is defined by the presence of fairly equal quantities of plain and cordmarked grog tempered pottery sherds in the ceramic assemblages from features. Withers Fabric Marked also increases somewhat, at least in the Gainesville area. Ceramic types found in low frequencies in the Gainesville area include Yates Net Impressed, Solomon Brushed, Alligator Incised, Gainesville Cob Marked, Gainesville Simple Stamped, Evansville Punctate, Avoyelles Punctate, and a variety of Wheeler Check Stamped with large rhomboidal checks (Jenkins 1978:10). Presently, most of these minority types have not been found in association with Miller III farther north in the Tombigbee River Valley.

Newly received radiocarbon dates have also precipitated a change by Jenkins in regard to the Middle and Late Miller III subphases. Initially he had estimated that the Middle Miller III subphase dated between A.D. 800 and 900 and Late Miller III between A.D. 900 and 1100. He now holds the opinion that there was actually no temporal separation between the Cofferdam and Catfish Bend subphases; in other words, there were apparently two spatially different cultural manifestations coexisting in the latter part of Miller III, between ca. A.D. 900 and 1000 (Jenkins 1979:269).

There appears to have been a significant population increase during Miller III which may have resulted from increased maize horticulture, evidence for which was recovered at the Cofferdam site (Blakeman, Atkinson, and Berry 1976:118-121). The large quantity and variety of animal bones found in association with all three Miller III subphases indicate that hunting techniques had been refined; the more efficient bow and arrow, indicated by small Madison points, came to be

extensively used by Miller III people. Shellfish collecting became more intense in Miller III times and was possibly a result of the population increase.

In regard to Miller III period lithic technology, Ensor (1978:15) states that heat treatment practices continued from Miller II but that a distinct technological change occurred. The change had to do with the temperature at which chert was heated. From thermal heating experiments conducted, Ensor concludes that Miller III groups were heating chert gravels to temperatures in excess of 500° C, as opposed to temperatures between 300 and 400° C during the Miller II period. The 500° C+ temperature produced an enormous quantity of heat spalled materials, which Ensor believes to have been an intentional reduction practice. This hypothesis is based on the following facts: (1) the small size of Miller III projectile points; this would have eliminated the necessity for low temperature heating to prevent heat spalling of cobbles. In other words, Miller II people intentionally heated below 400° C in order to prevent thermal explosion so extensive as to make the cobble useless for the manfacture of their medium-large, stemmed projectile points, but this was of no concern to Miller III people who could still make small arrow points from the exploded fragments. (2) the almost complete absence of cores in Miller III assemblages (3) the deep red color and more lustrious nature of the materials in Miller III assemblages which indicates high temperature heating, and (4) the generally smaller flake size in Miller III, "suggesting the reduction of smaller pieces" (Ensor 1978:16).

Terminal Miller III (the Gainesville Phase: ca. A.D. 1000-1100)

The Gainesville phase, recently established by Jenkins (1978:11; 1979:270) is characterized as being little different than Late Miller III except for the addition of a few Mississippian traits. A small amount of shell tempered ceramics are found in association with the grog tempered ceramics; occasionally grog tempered ceramics with loop handles occur in the assemblages. In addition, the house form changed from round to rectangular and burial positions changed from "tightly flexed with no consistent orientation to semi-extended on the back or

side with heads oriented to the east" (Jenkins 1979:270-271). Burial data from the Cofferdam site, however, does not support the purported change from tightly flexed in Early, Middle, and Late Miller III to semi-extended in the Gainesville phase, for eight out of 10 burials at that supposed Middle Miller III site were semi-extended on the back. Moreover, all but one of these burials were oriented with the heads toward the west (Blakeman, Atkinson, and Berry 1976:104). Since the Cofferdam burials do not conform to Jenkins' Middle Miller III burial trait identification, it is interesting that he would state that the Cofferdam site "fits nicely" in that subphase (Jenkins 1978:10). In actuality, the Cofferdam burials more closely fit Jenkins' Gainesville phase in that the burials were semi-extended on the back rather than tightly flexed and were oriented consistently; the only difference is that the Cofferdam burials were consistently oriented to the west instead of the east, as defined for the Gainesville phase. However, any consistency of orientation for the Cofferdam burials contradicts his definition of the Cofferdam subphase burial customs.

Jenkins is now of the opinion that the Middle, Late, and Terminal Miller III subphases were coeval and extended in time to about A.D. 1100. Although three Cofferdam dates on charcoal fell between A.D. 400 and 600 (Blakeman, Atkinson, and Berry 1976:107), two other dates on charcoal were A.D. 1180±70 and A.D. 1215±110 (UGA 1372, not received in time for publication in report); additionally, a date obtained from human bone was A.D. 1435±209. The A.D. 1180 and 1215 dates, therefore, may be generally accurate and the Miller III occupation at Cofferdam could have occurred very late in the Miller III period when Mississippian influences were present. The presence of one shell tempered sherd in each of three Miller III pits at Cofferdam could also be significant. One of these, Feature Z, produced the radiocarbon date of A.D. 1215±110, mentioned above. Both Feature Z and F, which produced the date of 1180±70, contained grog tempered ceramics with flaring rims similar to some Mississippian vessels (Blakeman, Atkinson, and Berry 1976:45-46). It is possible, therefore, as suggested by Jenkins (1979:269), that the Miller III component at Cofferdam represents one of several cultural

variations within the Late Miller III population of the central and upper valley and that these variations may have resulted from the degree of external cultural influences to which separate groups were subjected.

The Mississippian Period (ca. A.D.1000-1540)

The Mississippian period is represented in the Upper and Central Tombigbee Valley by both ceremonial mound sites and small outlying village sites. More often than not the Mississippian sites on the river proper were also occupied during the Miller III period and usually during earlier periods also. As in the Miller III period, shellfish collecting, wild plant food collecting, and hunting and fishing were practiced by the Mississippians but corn agriculture undoubtedly was the mainstay of the diet.

Mississippian occupation has been found along the Tombigbee from the Gainesville Lock and Dam to the headwaters of the river in Tishomingo County, Mississippi, but the more heavily settled area was in the Black Prairie zone south of Columbus, Mississippi (Blakeman 1975:102; Blakeman, Atkinson, and Berry 1976:23-25). All but one of the six known temple mound/ceremonial sites on the Upper and Central Tombigbee River proper are located south of Columbus. These sites are the Butler Mound (22Lo500), the two Chowder Springs Mounds (22Lo554 and 555), the Coleman Mound (22Lc507), and the Lubbub Creek Mound (1Pi85). The mound site north of Columbus is the Cotton Gin Port Mound (22Mo500), located near Amory, Mississippi. A few other temple mound sites are scattered in the Tombigbee drainage along secondary streams, the Lyon's Bluff site and mound (22Ok1) on Line Creek in Oktibbeha County, Mississippi (Marshall 1973) being the only one of these adequately investigated to date.

Archaeological investigations of Mississippian sites have produced cultural materials often similar or identical to those present at the Moundville Ceremonial Center in Alabama. For example, Mississippian ceramic types found in the Upper and Central Tombigbee Valley include Mississippi Plain, Bell Plain, Moundville Incised, Carthage Incised, Moundville Engraved, Mound Place Incised, Moundville Red Filmed, Barton Incised, Parkin Punctate, and Nodena Red and White (Nielsen and

Jenkins 1973; Marshall 1973; Rucker 1974; Blakeman 1975; Jenkins, Curren, and DeLeon 1975; Jenkins 1979). Some of the recent excavations of Mississippian sites have not yet been reported and one large temple mound site (1Pi85) is presently being investigated. The Mississippian occupation at the Kellogg site is treated below in this report and includes more information on the Mississippian culture than is presented here.

The Protohistoric and Historic Period (1540-present)

The Mississippian cultures of the Upper and Central Tombigbee Valley apparently declined significantly after A.D. 1500 and occupation of the river proper seems to have been minimal. Undoubtedly some of the Mississippian ceramics mentioned above continued for some time after A.D. 1500 but most of the pottery being made by 1690 had only superficial similarities to the early types (Jennings 1941; Atkinson 1975, 1976, 1979) and have been archaeologically associated with the historic tribes of the area, such as the Chickasaw. Apparently coupled with the breakdown of Mississippian culture was a change in settlement patterns, for rarely have protohistoric/historic contact aboriginal cultural materials been found on the Tombigbee River terraces where earlier Mississippian sites are located. Instead, at historic contact in 1690 the Chickasaws were concentrated in the Black Prairie zone in an area of ridges and hills near Tupelo, Mississippi, still in the Tombigbee drainage but about 40 km (25 miles) west of the river. Further south another large settlement area in 1690 was located in the Black Prairie zone on hills and ridges near Starkville, Mississippi, also about 40 km west of the river. This settlement is believed to have been that of the Chachiuma (Atkinson 1979), a group located between the Chickasaw to the north and the Choctaw to the south.

The almost complete abandonment of the river terraces during late prehistoric times in favor of the upland prairie area can be partially attributed to a more concentrated utilization of the open grassland areas scattered within the prairie. Although the wooded Tombigbee River floodplain was probably exploited by hunters during proto-historic times, the open prairie areas and adjacent forests would have supported

a great diversity of wild plant and animal life. Such open areas, unincumbered by shade, would have produced lush growth of small plants and shrubs, which would have provided food for both humans and herbivorous and omnivorous animals such as deer, bear, and turkey. The forests surrounding these open grasslands, which might have been maintained by controlled burning, would have provided a more exploitable faunal resource than the river proper, where browsing areas would have been more limited. Moreover, the numerous creeks traversing the upland prairie, with wooded floodplains often more than 2 km wide, would have possessed the same basic floral and faunal resources as the Tombigbee River and its floodplain. In addition, the rich soils of the Prairie were conducive to aboriginal agriculture (Adair 1930:438). Adair, an early 18th century trader, states in regard to the Chickasaws that every dwelling house had a small field nearby in which were planted corn in rows spaced about 1 m apart. Between the corn rows they planted "pumpkins, water-melons, marsh-mallows, sunflowers, and sundry sorts of beans and peas, the last two of which yield a large increase" (Adair 1930:439). Thus, the upland Prairie provided a more diversified subsistence system than the Tombigbee River proper, and in late prehistoric times habitation locale was commensurate with the more intensively developed utilization of the former area.

Abandonment of the Tombigbee River proper can also be attributed to social and defensive factors. The breakdown of the rigid Mississippian social system and the apparent ensuing confederation of culturally similar people into separate "tribes" living together in areally restricted settlements or "towns" would also have made the broad open prairies more attractive for habitation. In the Tombigbee River floodplain large, well-drained, and otherwise suitable areas for year around occupation by extremely large numbers of people did not exist. The upland prairie provided such large areas, thereby enabling the various culturally related families and affiliated groups of the Tombigbee Valley to live in close proximity to one another for economic, social, and defensive purposes.

The upper and Central Tombigbee River Valley remained under Indian control until the early 1800's when several treaties were signed that turned the area over to the United States Government and resulted in Indian removal to Oklohoma Territory. Thereafter, the area was quickly inhabited by non-Indian settlers.

IV. THE EXCAVATIONS

Introduction

The Kellogg site excavations were authorized with the receipt of a notice to proceed letter dated June 16, 1978, from the Contracting Officer, U.S. Corps of Engineers, Mobile District. The period between June 16, 1978, and June 28, 1978, was spent in preparation for the field work i.e., finding a field house, collecting equipment, purchasing supplies, coordinating with the local Corps officials, obtaining two sanitary toilets required by Corps safety rules, and assembling a field crew made up partially of persons from other states who had to travel long distances. The field work was initiated on June 29.

Methodology

The excavation methods utilized at the Kellogg site were partially dictated by the "General Excavation Plan" attached to the Scope of Work which accompanied the notification to proceed. A research proposal from Mississippi State University was not solicited by the Corps of Engineers; the excavation plan attached to the Scope of Work was formulated by Corps personnel in Mobile. The following is quoted directed from the "General Excavation Plan":

> The Kellogg Site (22C1527) offers an excellent opportunity to evaluate various technical aspects of field archaeology. The evaluation will potentially yield information which will lead to more efficient field techniques at similar, yet larger sites still to be investigated within the Tombigbee River Multi-Resource District. To implement these comparisons, the site will be quadrisected. At the intersection of the two transects (the center of the site) a four-by-four meter block will be isolated with a one-meter-wide trench cut by backhoe. The block will then be subdivided into 16 squares, each one meter square. Four additional four meter-square blocks will be excavated in an identical manner. Two blocks will be placed on each transect of the site near the margin, yet totally within the midden deposit.

> One square of [each] block will be removed in chunks for complete flotation. The flotation receptacle shall be a screen-bottomed device of between 490 microns and window screen size.
>
> Four squares of [each] block will be subjected to water-screening. A screen of different size will be used for each of these squares. Suggested sizes are ½", ¼", window screen and ca. 490 microns. In any event, one of the two smaller sizes will be identical to that used in the flotation device.
>
> The material from two squares [in each block] will be subjected to dry screening with suggested screen dimensions of ½" and ¼". All materials remaining in the screen from the above three techniques will be recovered and quantified in each minimally by weight. Counts should be made where appropriate.
>
> One square [in each block] will be collected by traditional techniques; e.g., hand selection during troweling. Three dimensional coordinates will be maintained to the nearest centimeter in this unit.
>
> Throughout [each] block, feature provenience will be maintained at all times.
>
> Additional excavations of not less than 90 m^3 will be accomplished on the site; placement and technique to be at the professional discretion of the Contractor.

As mentioned in the introductory chapter, the testing conducted in 1974 (Blakeman 1975) had not indicated the presence of burials and the few features discovered indicated that a relatively low quantity of the latter were present. By July 19, however, the first block excavation had revealed the presence of numerous burials, postmolds, and other features. The slow processes already involved with some of the excavation techniques (hand recovery, dry screening, etc.), combined with the excavation and recording of burials, postmolds, and other features created a serious time problem. The first block excavations were taking far too much time for four such blocks to be excavated by September 1. Moreover, the Scope of Work stipulated that an additional 90 m^3 of the site was to be excavated by a technique left to the discretion of the Contractor. On August 2, this problem was discussed at the site with a Corps representative and the black excavation requirement was subsequently reduced from four 4 m x 4 m blocks to a single 4 m x 4 m block and a second 4 m x 2 m block. After August 2, therefore, the excavations were oriented toward finishing the two block excavations and at the same time recovering as much additional

data as possible from the remainder of the site by stripping with heavy machinery. To clarify the excavation procedures used at the Kellogg site, each specific activity conducted during the excavation is discussed below.

Clearing the Site

The site was first cleared of small trees and undergrowth, primarily by a bulldozer and driver graciously furnished by Folk Construction Company, the contractor engaged in the excavation of the channel-cut. The driver did an excellent job of clearing without gouging into the soil and damage to the surface was minimal. A very large oak tree and some smaller adjacent trees were left standing on the western edge of the site and the trees on the east side on the immediate edge of the river bank were also left intact. The bulldozer-cleared area was further cleaned up by the field crew using a chainsaw, axes, and kaiser blades.

Gridding and Mapping

Following the clearing operation, north-south and east-west base lines were established and staked at two meter intervals. Additional grid stakes were placed as needed for provenience control in the excavation of the blocks and recording of features located during stripping. The base lines intersect stake was arbitrarily numbered 200N200E and designated as a datum point; a second datum point for intrasite leveling control was established at stake 204N210E. The site was mapped with a transit by taking readings on stakes on the base lines at 2 to 4 m intervals and by taking 4 to 6 m interval readings on radiating lines of sight from the base lines intersect datum stake. Following the field work the elevation figures recorded were used to prepare the topographic map (Figure 3).

Following the 1974 testing (Blakeman 1975) the datum point established then was marked by driving an iron pipe into the ground but subsequent disturbance of the area alongside the road prevented its relocation in 1978. Thus, the completely new grid and datums discussed above had to be established; the 1974 test squares shown on Figure 3 are approximate locations.

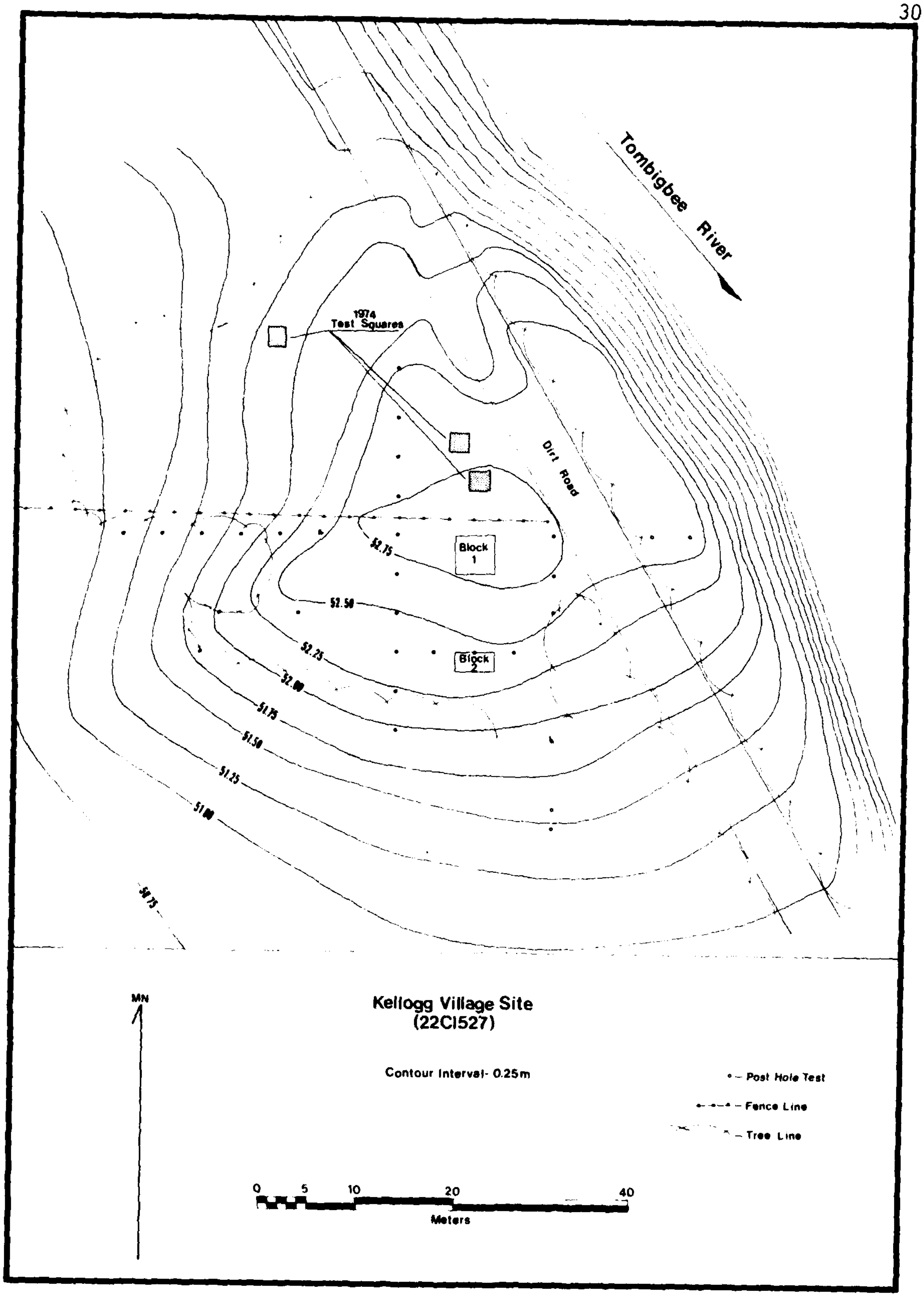


Figure 3. Topographical map of the Kellogg Village site.

Excavation and Recovery Techniques

As mentioned above the Kellogg site was viewed as a good opportunity to test various excavation techniques in an effort to obtain evaluative data that could be used in the investigation of other sites within the Tombigbee River Multiple-Resource District. Below each technique as applied at the Kellogg site is discussed; the several techniques have already been stated above.

Block isolation and excavation. Two blocks, one 4 m x 4 m and the other 4 m x 2 m in size, were isolated by digging a 70 cm-wide backhoe trench with a rented machine called a "Bobcat". Fortunately this machine was fairly easy to learn to operate and after an hour or so of practice those on the crew who dug the trenches (the supervisors) became quite proficient at it. Since the bucket of the backhoe was only 70 cm wide the one meter-wide stipulation in the Scope of Work was necessarily modified. The 4 m x 4 m block (Block 1), located near the center of the site, was isolated first (Plate 3). The soil from the backhoe trench was piled alongside the trench and later removed with the Bobcat using a front end loader bucket attachment that was interchangeable with the backhoe. The trench was dug to a depth of 1 meter without regard for possible features or artifacts. However, when the feet of a burial were encountered in the west end of the south trench, excavation of that part of the trench was suspended until the burial could be carefully excavated by hand along with the 1 m square into which part of it intruded. After the burial was excavated and removed a few days later, the trench was completed by hand with shovels, for the Bobcat had been returned to the owner.

After troweling the walls smooth and drawing and photographing the wall profiles in the trench, the block was divided into 16 one m squares and excavation begun. One of the first squares excavated was on the southeast corner of the block; it contained part of the burial encountered in the trench. As stipulated in the "General Excavation Plan", eight squares of the block were each to be treated in a different manner: one completely floated, one waterscreened

through ½" mesh, one waterscreened through ¼" mesh, one waterscreened through window screen (1/16" mesh), one waterscreened through 490 micron mesh, one dry screened through ½" mesh, one dry screened through ¼" mesh, and one collected by hand selection of artifacts only. These methods were used on Block 1 with the exception of the 490 micron waterscreen recovery. Waiver of this technique was agreed to by the contracting officer's representative when the Principal Investigator advised him that such a screen large enough for a water screen frame could not be obtained from the few manufacturers who make screens with mesh that small. Even if such a screen had been available it is quite probable that waterscreening through a mesh that fine would have been next to impossible, for many sand grains are larger than 490 microns.

In summary, seven squares of Block 1 were subjected to the above recovery techniques, excluding the 490 micron waterscreen. As stated in the "General Excavation Plan", the remaining eight squares (now nine counting the waived 490 micron waterscreen square) were to be excavated by any technique desired by the contractor. These nine squares were hand excavated by levels and the soil was waterscreened through ¼" mesh. Figure 4 shows the 16 squares of Block 1 and the recovery techniques used on each.

As there was no specific stipulation in the "General Excavation Plan" as to how feature fill was to be treated the Principal Investigator instructed the crew to waterscreen all feature fill through a ¼" screen with a window screen underneath, after flotation samples were collected. However, upon learning that the features in Block 1 were being treated this way, the contracting officer's representative informed the Principal Investigator that the features in each square were supposed to be subjected to the same recovery technique as the general midden. Since we had already excavated a number of features it was agreed that feature excavation would continue as it had started in Block 1 but that features in Block 2 would be treated according to the particular technique being used in the square or squares in which they were located.

As mentioned above, Block 2 (Plate 4) was reduced in size by mutual agreement from 4 m x 4 m to 4 m x 2 m. The same recovery techniques used in Block 1 were used in the eight squares of Block 2 (Figure 4). Since the 490 micron water screen technique had been waived two squares instead of one were waterscreened through ¼" mesh.

In digging the Block 2 backhoe trench three burials were encountered, one each in the south, west, and north side trenches (Figure 5). Again, the trench excavations were suspended until the burials were removed by hand and then the trenches were completed with shovels.

Post hole testing. In order to determine overall internal stratigraphy a series of small holes were dug across the site with a post hole digger (Figure 3). This operation is discussed in more detail below under the heading "Stratigraphy."

Stripping with heavy machinery. Approximately 500 square meters of the Kellogg site were investigated by stripping off the upper soil deposit with a road grader supplied by Folk Construction Company. The original plan had been to conduct the stripping operation after completion of the block excavation but in order to determine the quantity and nature of expected features beforehand a single grader blade-width area along the west side of Blocks 1 and 2 was stripped before the block excavations were completed. In this strip, designated Grader Strip 1 (Figure 5), about 15 cm of the midden were removed by the road grader. One row of burials had already been discovered as a result of the Block 1 excavation and the grader strip revealed a second row, along with a number of other features. By this time it was becoming increasingly obvious that the site held numerous burials and the time available for excavating them and the even more numerous other features became a matter of great concern. From that time on, therefore, excavation of the blocks and the features revealed by stripping were conducted concurrently.

One major problem occurred in stripping the site. Because of the dense amount of shell present, post molds, burials, and other features usually could not be discerned until the stripping had been carried into the soil below the obscuring shell; then they were usually quite

Block 1

200N 206E — 200N 210E

1/2" D	hand	1/4" W	1/4" W
1/4" W	1/4" W	1/2" W	1/16" W
1/4" W	1/4" W	flota-tion	1/4" W
1/4" D	1/4" W	1/4" W	1/4" W

196N 206E — 196N 210E

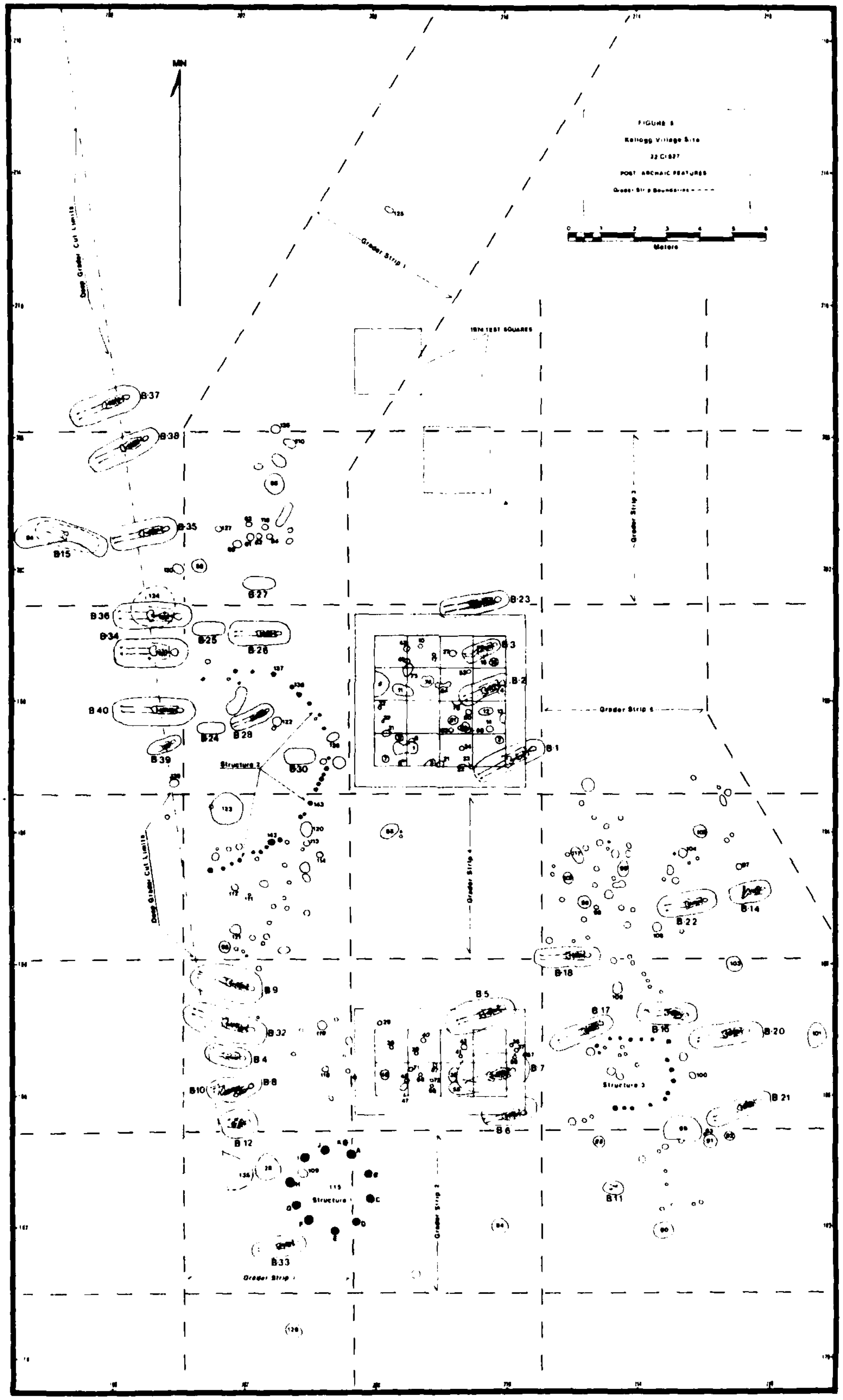
Block 2

188N 206E — 188N 210E

1/2" D	1/2" W	1/16" W	1/4" W
hand	flota-tion	1/4" D	1/4" W

186N 206E — 186N 210E

Figure 4. Recovery techniques for each square in Blocks 1 and 2


MN
Kellogg Village Site
POST ARCHAIC FEATURES
Meters
Grader Strip 1
Grader Strip 2
Grader Strip 3
Grader Strip 4
1974 TEST SQUARES
Deep Grader Cut Limits
Structure 2
Structure 3
Structure
B 1
B 2
B 3
B 4
B 5
B 6
B 7
B 8
B 9
B 10
B 11
B 12
B 14
B 15
B 16
B 17
B 18
B 20
B 21
B 22
B 23
B 24
B 25
B 26
B 27
B 28
B 30
B 32
B 33
B 34
B 35
B 36
B 37
B 38
B 39
B 40

obvious, especially those which contained shells. The problem, however, resulted when the grader, cutting at a consistent level, would remove all the shallower shell zone on the margins of the site but not completely remove it in the central portion where the shell zone was deepest. This inconsistency, therefore, exposed features in half of the strip while most of those in the other half were still obscured. In order to prevent further damage to the exposed features by the wheels and blade of the grader the stripping had to be suspended until the features could be recorded and investigated. As a result, time did not always allow the complete removal of the shell zone in certain areas of each grader strip. These stripped areas of the site where the shell zone was not completely removed are indicated on Feature 5, which shows a significant sparcity of recorded features in those areas.

Because so much time was necessary to investigate the numerous burials and other features of the post-Archaic occupations, deep stripping into the Archaic deposit was limited. On the next to last day of the field work, however, an earth mover, or pan, was obtained from the construction company and used in Grader Cut 1 to remove layers of soil all the way to the bottom of the cultural deposit (ca. 1 m maximum). This machine was used instead of the grader because of its ability to remove more soil faster and in thicker strips than the grader, a capability required because of the time factor. In using the earth mover to at least sample an extended area of the Archaic zone, some post-Archaic burials and other features were encountered that had not been detected earlier because of the incompletely removed and obscuring shell zone. The most noticeable of these were 10 Mississippian burials on the north half of the strip that proved to be in line with the 5 rowed burials already excavated that had been revealed by the road grader in the south half of the strip. Most of the burials encountered by the earth mover were badly damaged and many bones of some skeletons were not recovered. The purpose of the deep stripping was accomplished, however, because several Archaic features were exposed, recorded, and excavated, thereby providing a more

comprehensive sample of the nature of the Archaic occupation than would have been acquired otherwise.

Provenience control and recording. Except for the disturbed 5-15 cm thick plowzone (Level 1), which was removed in its entirety, each of the two cultural zones (discussed below) in the isolated blocks were excavated in arbitrary 10 cm levels and were numbered consecutively. Vertical profile drawings were made of all four walls of each isolated block before excavation; other vertical profiles were drawn as the excavation of the individual squares progressed. Plan drawings were made of each level of the individual 1 m squares. Additional horizontal and vertical profiles were drawn of each feature excavated, and horizontal profiles were drawn of each burial pit. Following the exposure of the bones, scale drawings were made of each skeleton *in situ*, along with any associated grave goods. Excavated features in the grader strips were also treated in this manner. Vertical control was maintained with the use of a water level consisting of a long clear plastic tube filled with water (see Irwin-Williams 1970:108-110 for a description of this simple but extremely accurate intrasite leveling device).

Burials, post molds, and other features exposed in the grader strips were plotted on an overall plan map with the transit and more detailed drawings were made of the individual grader strips by using metric tapes and folding rulers. All burials and other features were numbered consecutively as they were recorded. Appropriate detailed data forms for levels and features were filled out by the individual excavator and approved by a supervisor. Both black and white and color photographs were taken of features, burials, and important profiles. All cultural materials recovered were bagged and labeled by provenience and each bag was assigned a bag number, labeled accordingly, and appropriate provenience data was entered on a bag list. The bag numbers, provience data, date, and excavator's initials were written on pieces of flagging tape with a magic marker and placed in each wheelbarrow of soil and dumped into the waterscreens with the soil; after waterscreening, the materials left in the screen were then transferred

to small screens and placed in the sun to dry. Afterwards the information on the tapes was written on bags into which the materials were placed. The tapes were placed in the labeled bags where they remained until lab analysis was conducted.

Recovery of cultural materials and soil samples. Waterscreening was conducted on the site by using a wooden waterscreen apparatus which held two 1 m x 1 m screen frames. A sturdy wooden platform was built in front of the waterscreen apparatus for wheelbarrow access. The waterscreen operation was set up on the edge of the river bank on the northeast margin of the site. Water was supplied by a pump with a 4-cycle engine placed near the water's edge. The pump pushed water up the steep bank of the river through a single hose; a "T" joint in the hose part way up the river bank divided the water into two hoses, one for each waterscreen frame. Water pressure was excellent and the only problems that occurred were occasional mechanical breakdowns of the waterpump engine.

Of the 24 1 m x 1 m units excavated, 16 were subjected to waterscreening; the screen sizes have been discussed above and are shown for each square in Figure 4 above. In addition most of the excavated features in the blocks and all from the grader strip operation were waterscreened. The features were waterscreened through ¼" mesh with window screen underneath; burial pit fill was waterscreened through ¼" mesh only.

Dryscreening was conducted by suspending a screen frame from the center of a large tripod built of small trees cut near the site. Always this operation was set up on the site near the particular unit being excavated. Four 1 m x 1 m units were dryscreened, two with ½" mesh and two with ¼" mesh (see Figure 4).

Two 1 m x 1 m units were excavated simply by taking each level down by digging carefully with a trowel. This was a very time consuming recovery technique and generally only artifacts larger than flakes were plotted by three dimensional coordinates as stipulated by the Scope of Work. In excavating with a trowel the displacement of small items such as flakes is extremely difficult to avoid so no attempt was made to

recover them in situ. In order to do so the squares would have had to have been excavated with a small instrument such as a grapefruit knife and time simply did not allow such a slow procedure.

Flotation on the site was limited to the two 1 m x 1 m units which were completely floated. Flotation samples were collected from all features but these were floated at the lab on the Mississippi State University campus after the field work was finished. Flotation both in the field and at the lab was done by using a flotation device consisting of a 50 gallon drum connected to one of the water pump hoses (Plate 5). The water entered through the bottom of the drum and was directed upward inside through a series of five interconnected shower heads. The shower heads were positioned below the bottom of the removable window-screen bottomed flotation tub which was inserted in the top of the drum. The upward force of the water from the shower heads served to break up the dirt in the flotation tub and at the same time force lighter charred material to the surface where it exited with the water through a spout which emptied into a series of graduated screens. The first screen mesh was ¼" in size and served primarily to catch roots and wood chunks. The next screen below that was window screen size and the last was 500 microns. After each sample or level was floated the incoming water was shut off, a drain spout at the bottom of the drum was opened, and the drum was cleaned out to avoid possible contamination of the next level or sample to be floated.

Not all charred material would pass out of the flotation tub and into the graduated screens but the residue in the bottom of the tub was saved and later analysed along with the materials caught by the screens. Although complete recovery was not achieved, as evidenced by the presence of charred material in the dirt residue in the bottom of the drum after each flotation, it is felt that the botanical samples acquired are representative of the preserved floral materials that were present in the units and features. Considering that confidence levels should correspond directly with sample size, the fore-going statement should be especially true in regard to the two 1 m x 1 m units, which involved the complete flotation of two cubic meters of soil.

A secondary benefit of the flotation drum was a water faucet attached to the input valve at the base of the drum. To this faucet was attached a series of three connected garden hoses which provided running water on the site. When the grader stripped areas dried out and became difficult to shovel skim or trowel the water hose with an attached spray nozzle was used to wet down large areas in a matter of minutes.

Fifteen pollen samples were collected at the Kellogg site (discussed in Chapter VII). All but two of these comprised a column sample taken from the outside trench wall of Block 1. The column sample was obtained by pressing medicine vials into the profile at each 10 cm interval from the top of the cultural deposit to the bottom. Before each vial was pressed into the soil the profile was shaved to eliminate modern contamination. The vials were withdrawn and immediately capped and labeled. Another pollen sample consisted of a small block extracted from the interior of the fill inside of a Mississippi Plain jar found with Burial 7. This sample was immediately wrapped in aluminum foil and labeled. Pollen samples were not usually taken from features, burials, and post molds because the fills in them often constituted a mixture of materials from hundreds of years of occupation and no credible environmental or cultigen data on specific cultures would likely have been forthcoming. However, a pollen sample was taken from Burial 19, an Archaic cremation at the base of the cultural deposit in Block 1.

Carbon samples were collected from the general excavation levels and from features. Of the 40+ samples collected many were eliminated from consideration for dating because of inadequate size or unclear cultural associations. Eighteen samples, including 17 charcoal and one burned shell sample, were considered suitable for dating and were submitted to the Geochronological Lab at the University of Georgia. The samples represent most of the cultural occupations present on the site. The dates obtained are discussed below.

Soil samples were taken from each excavated feature and burial. In addition, soil samples were taken from each 10 cm level in the outside trench wall of Block 2. This column sample and selected feature and

burial samples were analyzed for pH and phosphate levels by the Mississippi State University Extension Service and are discussed below.

Stratigraphy

The Kellogg site had a cultural deposit 100 cm at maximum depth in the central portion where Block 1 was excavated. This deep deposit extended east to the river bank but it gradually became shallower toward the northern, southern, and western margins of the site (Figure 10).

The stratigraphy of the site was primarily determined in two ways. First, the Block 1 backhoe trench provided 5.4 m long north-south and east-west profiles of the central and deepest portion of the site (Figures 6 and 7). Although the backhoe trench was terminated shortly after entering sterile soil (Zone 3) deeper stratigraphic conditions in the Block 1 area were determined by using a post hole digger in the bottom of the trench. This revealed deeper strata consisting of layers of sand and clay (Zone 4) and gravel (Zone 5). The Block 2 backhoe trench, located near the center of the south half of the site, provided a 3.4 m long north-south profile and a 5.4 m long east-west profile (Figures 8 and 9). The stratigraphy was the same in both the Block 1 and Block 2 trench profiles except that the cultural deposit was shallower in the latter. The stratigraphy on the north half of the site was also similar, as shown by the 1974 testing (Blakeman 1975:26-35).

After discerning the general stratigraphic soil zones from the backhoe profiles a series of post hole tests were placed over the entire site in order to gain a more comprehensive view of the overall site stratigraphy. The location of each post hole test is shown in Figure 3.

As mentioned above, a gravel deposit (Zone 5) was revealed by post hole tests placed in the bottom of the Block 1 backhoe trench. Because of its depth, however, the gravel could not be reached by the post hole digger in the tests initiated from the surface so overall site stratigraphy at that depth was not determined during the field work. A subsequent visit to the site in March 1979, after the entire site had been cross sectioned by the excavation of the channel, presented a nearly

complete visual north-south profile to a depth of about 5 m. This profile contributed significantly to the understanding of the geomorphological history of the site area and, subsequently, provided clues as to why the site was chosen for occupation. Figure 10, a rough sketch of this profile, shows that the gravel deposit mentioned above did not occur at a consistent straight level across the site; instead it curved from one edge of the site to the other and apparently represented an early Holocene or late Pleistocene point bar deposit resulting from an ancient river meander. Afterwards the low swampy conditions adjacent to the bar apparently resulted in the blue clay deposit adjacent to the lower portion of the gravel layer (Figure 10); subsequent flooding apparently deposited the sand and yellow-brown silty clay which overlay these deposits. At the time of initial occupation during the Archaic period the site area presumably was higher and thus better drained than the immediately surrounding environs, thus accounting for its selection as a place suitable for occupation in the floodplain.

Both the post hole testing and the channel cut profile revealed a stratigraphic inconsistency on the south margin of the site where the general cultural deposit had gradually thinned to a depth of about 30 cm. Here the cultural deposit rather sharply sloped downward toward the south edge of the site to a depth of about 80 cm, and then sloped back up to the normally thin cultural deposit (Figure 10). After encountering this depression during the post hole testing a backhoe trench was dug across it in a north-south direction in order to observe it in profile as well as to examine the soil for artifacts. The depression contained a dark brown soil that was more compact than the similarly colored soil in Zones 1 and 2 of the midden in the central portion of the site. The profiles in the trench and the back dirt soil were carefully examined for artifacts and the only cultural material observed were numerous fire-cracked pebbles and a few pieces of sandstone. Ceramics, lithic flaking debitage, or finished tools were not observed. The investigation of this depression was then suspended with the intention of placing a 1 x 1 m test unit there later in the field work. Unfortunately, however, a test pit was never excavated because time was

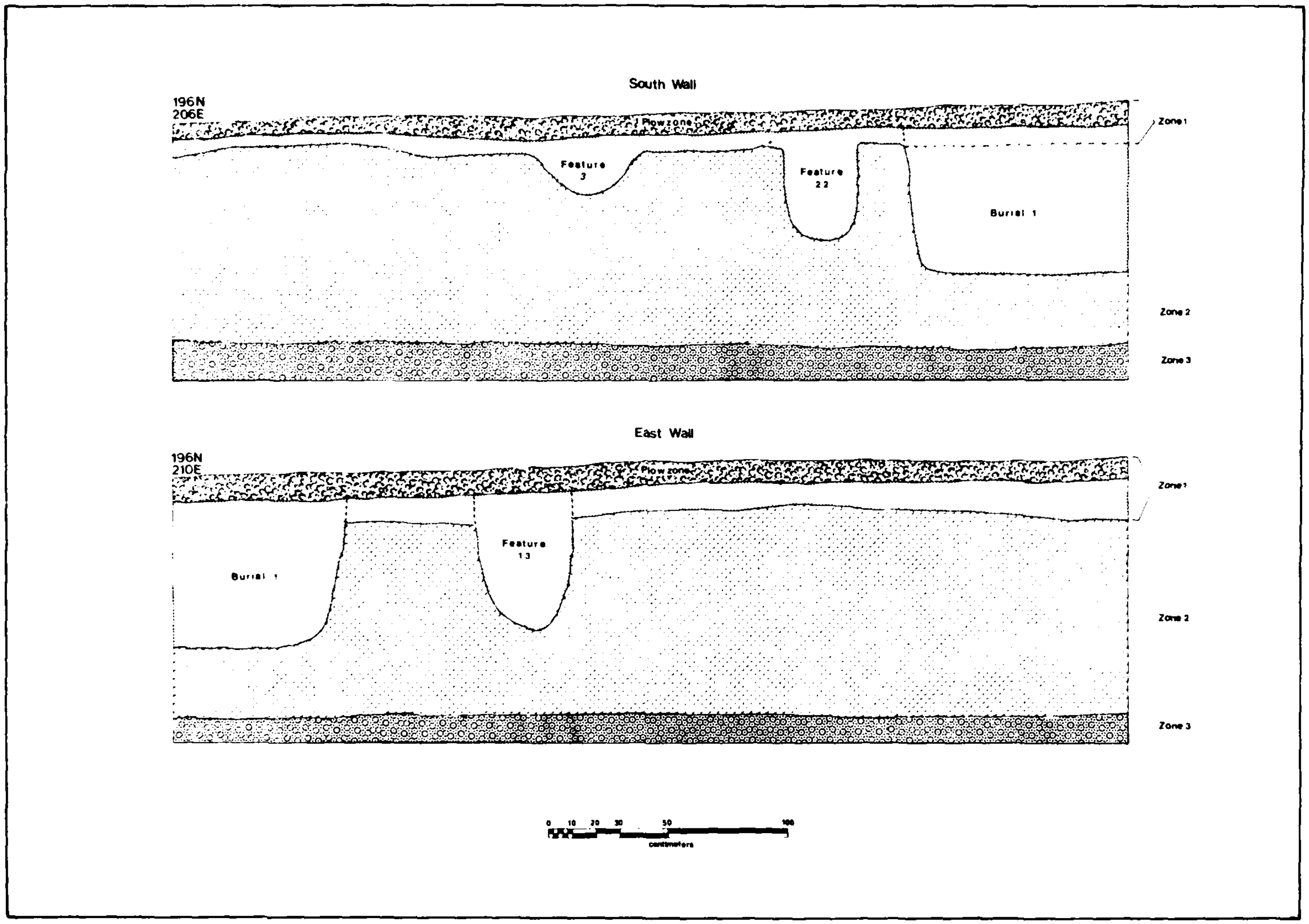


Figure 6. Block 1 profiles: South and east walls.

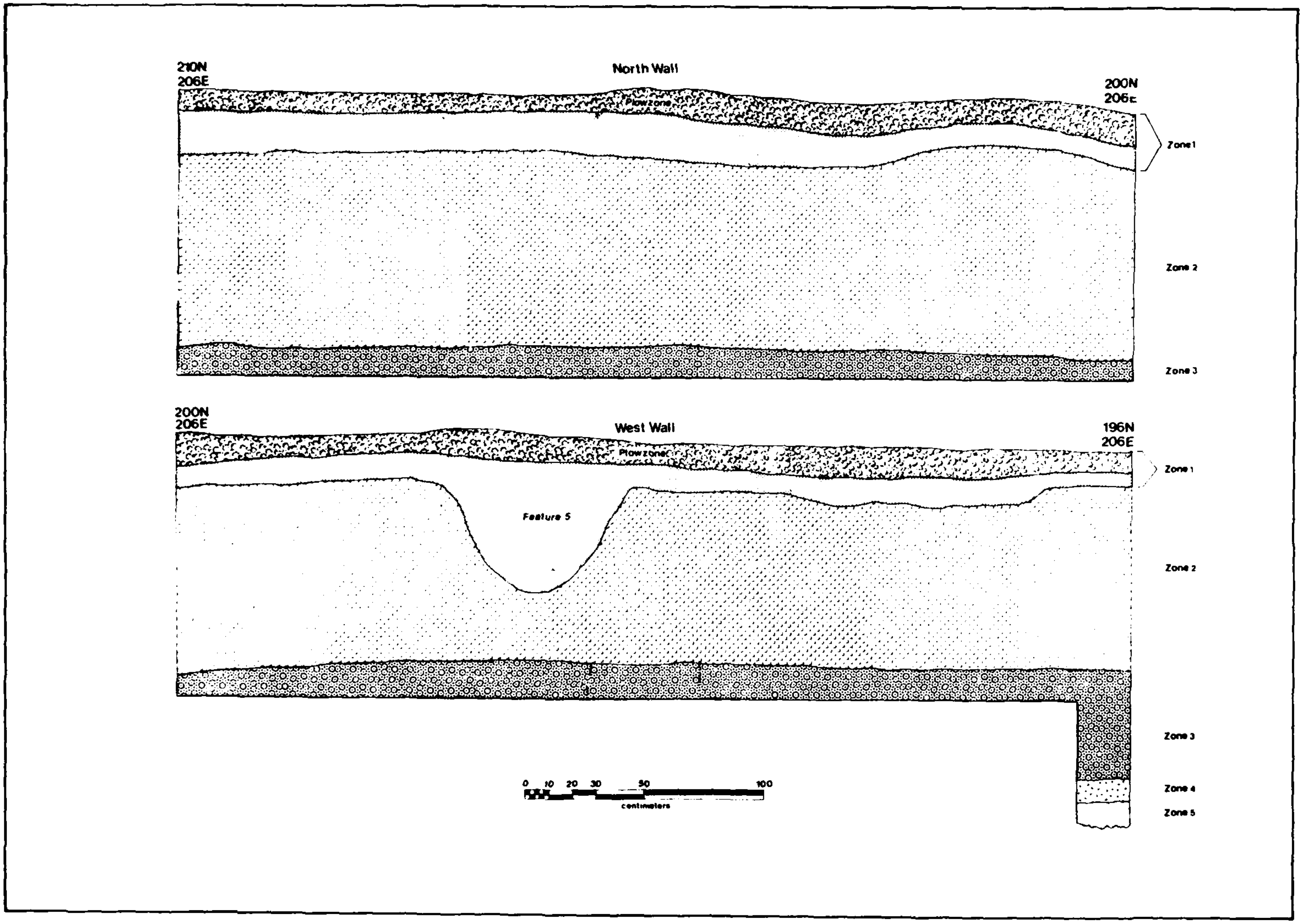


Figure 7. Block 1 profiles: North and west walls.

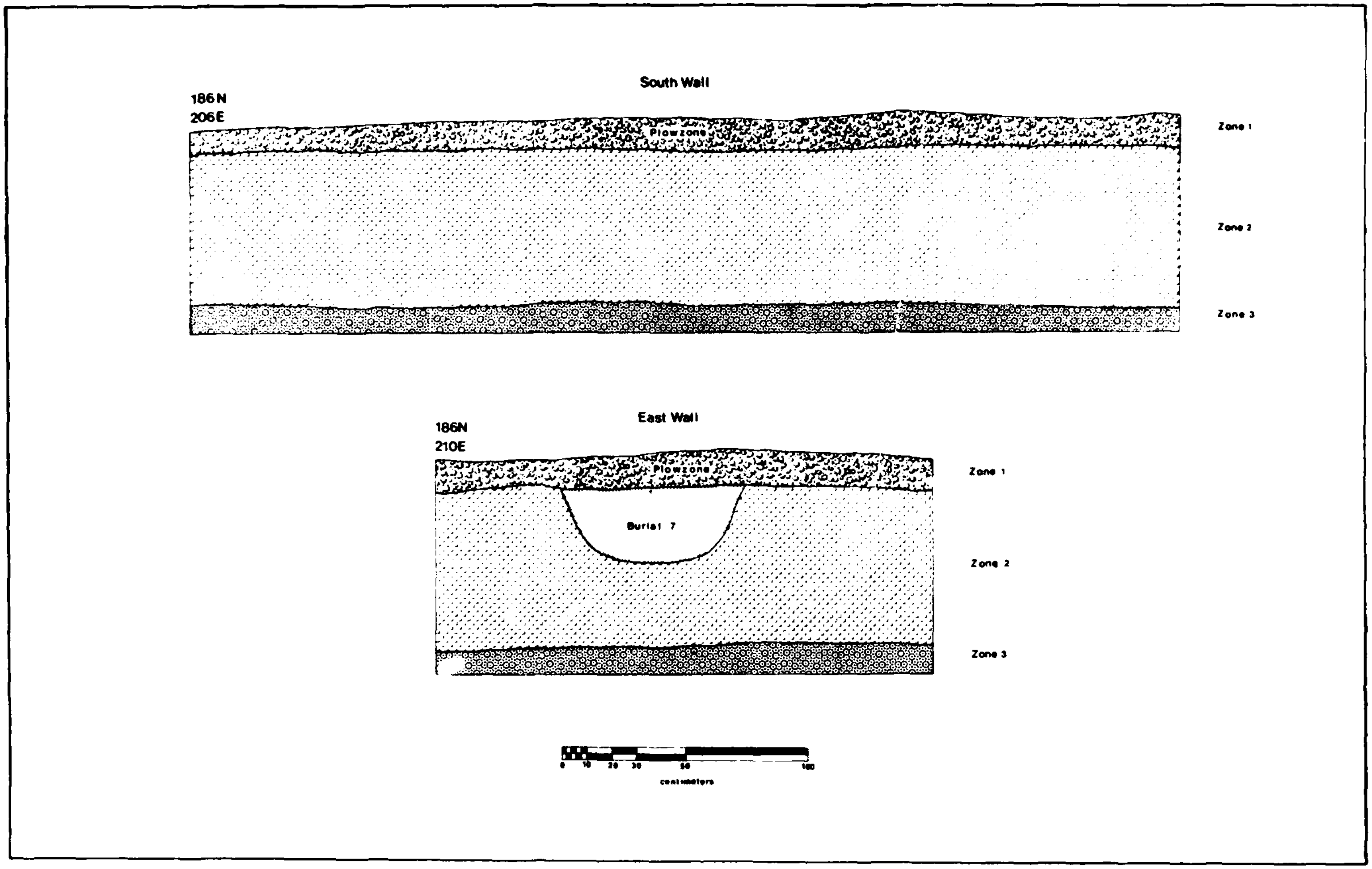


Figure 8. Block 2 profiles: South and east walls.

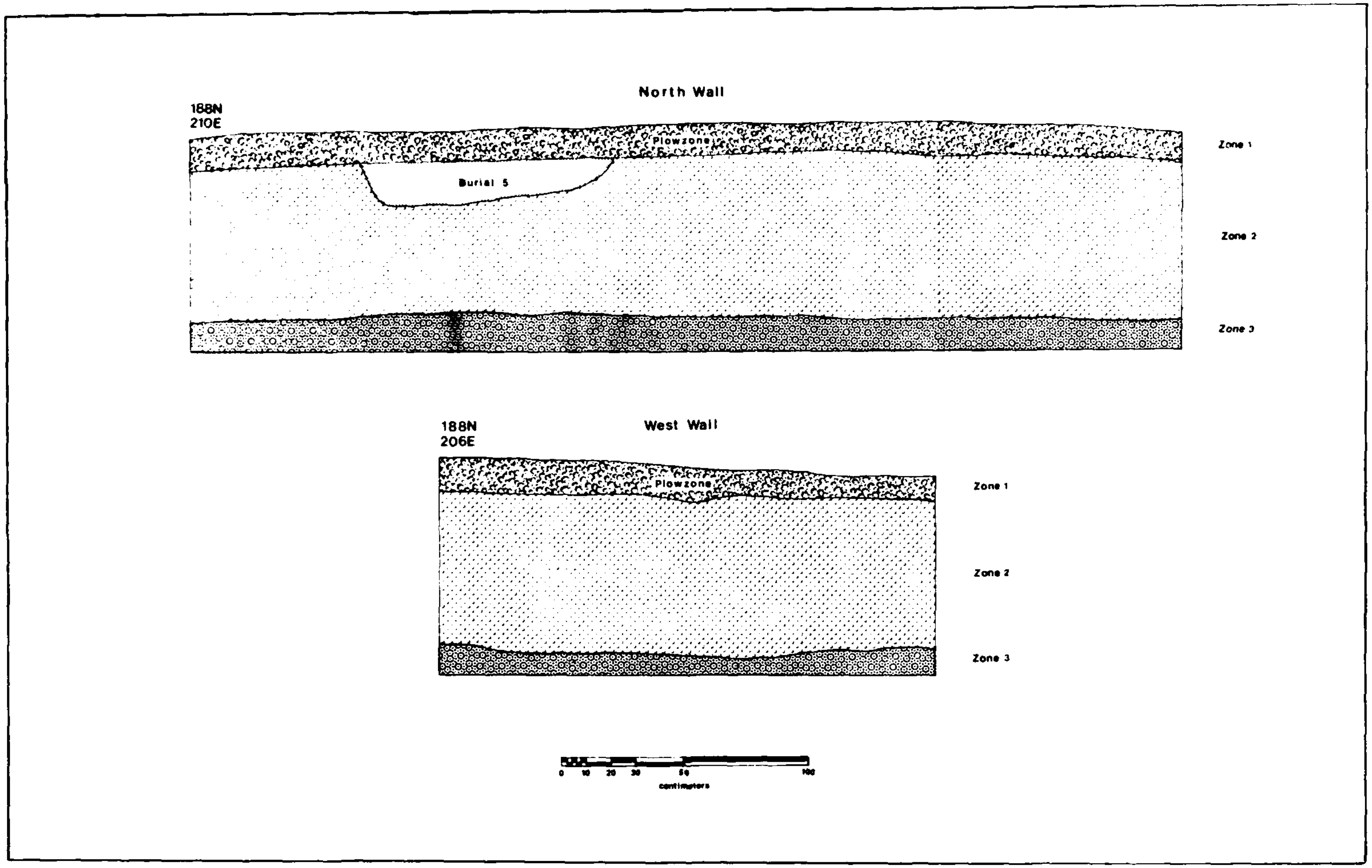


Figure 9. Block 2 profiles: North and west walls.

A-- Zone 1: Shell midden deposit (0-25 cm below surface)
B-- Zone 2: Archaic Deposit (25-100 cm below surface)
C-- Zone 3: Yellow-brown clay with small pebbles (45 cm in thickness on site to 2 m in thickness off site
D-- Zone 4: Yellow-brown sand/brown clay mixture (10 cm in thickness)
E-- Zone 5: Tuscaloosa Gravel/sand mixture (45 cm in thickness)
F-- Zone 6: Stiff, light brown clay (2 m below surface to at least 5 m below surface)
G-- Zone 7: Blue clay deposit (ca. 3 m below surface off site to at least 4 m below surface)

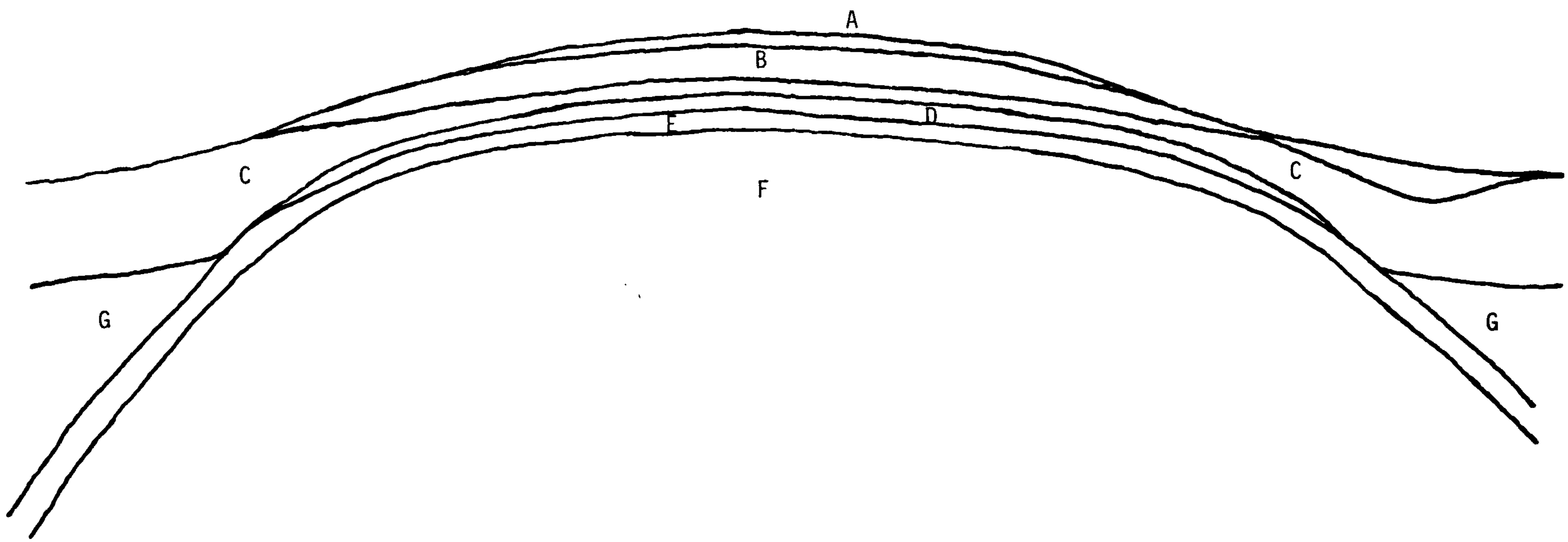


Figure 10. Sketch of the Kellogg site stratigraphy as revealed by the archaeological investigations and the construction of the Tennessee-Tombigbee Waterway Canal through the site.

not available. Thus, the field work ended with the nature of the depression uncertain in regard to size, shape, and origin. The channel cut profile observed later, however, revealed that it was apparently a long natural depression which ran east-west along the edge of the site and probably was formed by erosion; it could have been formed quickly during a flood or perhaps by a small, short-lived stream that flowed into the river before occupation of the site occurred. The apparent absence of ceramics in the soil of the depression and the presence of fire-cracked pebbles indicates that it was filled during the Archaic period by either intentional dumping of refuse by the inhabitants or by natural wash from the site, or both. The stratigraphic zones shown in Figures 6-10 are individually discussed below.

Block 1

Zone 1 (surface-25 cm): This zone, irregular in depth but extending no deeper than 25 cm, consisted of a dark brown soil (7.5 YR 3/4 Munsell notation) characterized by the presence of shellfish, ceramics, lithics, charcoal fragments, and animal bones. It was derived entirely from the Woodland and Mississippian occupations and most of the features discernible in the next zone originated there. However, the materials in the zone were generally mixed because of aboriginal digging and modern cultivation.

Zone 2 (25 cm-100 cm): Although containing a few small sherds, apparently intrusive, this zone was primarily formed during the Archaic occupation of the site. The soil was generally reddish-brown in color (5YR 3/3), contained charcoal fragments and lithics, and, except for intrusions originating in Zone 1, was generally void of shellfish remains. In the lower half of the zone the soil was slightly lighter (5YR 3/4) and there was a rather sharp decrease in lithic material (see Tables 1, 4, and 5) and charcoal fragments; animal bones recovered were sparse and those present were usually burned fragments. The initial occupation of the site appears to be represented at the base of the zone; several features originated there and extended deeper into the sterile yellow-brown clay of the next zone.

Zone 3 (100 cm-145 cm): This zone consisted of a silty, yellow-

brown (10YR 5/8) sterile clay containing small water worn pebbles. An occasional flake was found in the upper 10 cm but there was no evidence that the zone was occupational. Instead, the few flakes present probably found their way into the zone from above through root holes or some other means.

Zone 4 (145 cm-155 cm): This sterile zone was identified in Block 1 by post hole tests, for the general excavations were not carried below 120 cm in Zone 3. The soil of the zone consisted of compacted yellow-brown (10YR 5/8) sand containing brown clay lumps.

Zone 5 (155 cm-200 cm): This zone consisted of a band of redeposited Tuscaloosa Formation gravel mixed with sand which, as mentioned above, appeared to have been deposited on an old point bar of an extinct channel of the Tombigbee River. Since this band curved downward to the north and south, as shown in Figure 10, it occurred closer to the surface in the central site area where the apex of the band existed than it did near the margins of the site. This zone was also discovered and penetrated slightly with a post hole digger but its thickness was not discerned until after the channel cut profile was observed in March 1979.

Zone 6 (200 cm and below to an undetermined depth): This zone constituted the point bar mentioned above. It consisted of a stiff, light brown clay.

Block 2

The same zones as described for Block 1 were also present in the Block 2 area but the cultural deposit zones were not quite as thick. In Block 1 the maximum cultural deposit was about 100 cm in depth but in Block 2, located eight meters to the south, the maximum cultural deposit was about 75 cm deep. The stratigraphic zones in the Block 2 area, as determined by the excavations and the channel cut profile, were as follows:

Zone 1 (surface-12 cm): See description above.

Zone 2 (12 cm-75 cm): See description above.

Zone 3 (75 cm-120 cm): See description above.

Zones 4-6: See Figure 10 and descriptions above.

V. ARTIFACTS RECOVERED

Lithics

A wide variety of lithic artifacts were recovered from the Kellogg site. These artifacts represent the exploitation of several lithic resources and the utilization of many lithic forms. Tuscaloosa gravel, Fort Payne chert, Tallahatta quartzite, clay stone, siltstone, several types of sandstone, quartz, hematite, limonite and chlorite schist were all utilized to manufacture chipped, pecked and ground, and polished stone artifacts.

During the analysis the lithic debris and extraneous lithics were examined and categorized into the following classes: flakes, chips and shatter; fire cracked rock; pebbles; and unworked sandstone fragments. The flakes, chips and shatter were counted and weighed while the others were simply weighed. All tools and tool fragments, including utilized and retouched flakes, were separated for further study. Lithics recovered are tabulated in Tables 1-5.

The tool assemblage from the Kellogg site presents a problem in that it did not easily fit the traditional North American typology such as that used by Lewis and Lewis (1961) and Faulkner and McCollough (1973). Therefore, a descriptive morphological system was used. Those tools that did fit the traditional tool typologies, such as projectile points/knives, drills, perforators, and gravers, were classified accordingly. Where edge wear and form provided clues, a tentative function was assigned to the other less definitive tool categories.

One hundred one projectile points, representing several periods of prehistory were recovered from the Kellogg site. These points have provided data on manufacturing techniques as well as the utilization of lithic resources. Rather than force groups of similar points into a name type such as those presented by Cambron and Hulse (1964), a descriptive-morphological classification system was utilized.

Table 1. Lithics from excavation units

Square 186N206E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Shaft drills				1										1
Notched bifaces	1													1
Triangular pre-forms	1													1
Biface distal ends	3													3
Biface fragments	1													1
Retouched flakes	3													3
Gray Chert														
Retouched flakes	1													1
Tallahatta Quartzite														
Class V Proj. Points	1													1
Flakes and Shatter	122	10	4	7	4	4	15							170
Fire-cracked rock	919g	629g	2104g	950g	123g	21g	3g	5g						
Pebbles	1239g	578g	450g	803g	368g	351g	110g	71g						
Sandstone														
Ground fragments	12	8	6	1										27
Un-ground fragments	109g	51g	155g	177g	9g	6g								

Table 1. (cont.) SQUARE 186N207E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Class K Proj. Point		1												1
Class Y Proj. Point	2													2
Biface adze/ scrapers	1													1
Elongated cutting tools	1													1
Biface distal ends	1													1
Biface fragments	6													6
Retouched flakes	3													3
Utilized fire-cracked rocks				1	1									2
Yellow Chert														
Class Y Proj. Point	1													1
Medium oval biface scrapers	1	1												2
Biface fragments	1													1
Hammerstones				1										1
Gray Chert														
Biface fragments		1												1
Pink Chert														
Class N Proj. Point		1												1
Flakes and Shatter	551	45	102	101	49	59	16	3						926
Fire-cracked rock	1239g	1025g	1169g	691g	158g	116g	32g	3g						
Pebbles	2008g	998g	1312g	826g	588g	310g	98g	114g						
Sandstone														
Ground fragments	8	2												10
Un-ground fragments	310g	55g	65g	47g	15g	31g								
Limestone fragments	8g													
Petrified wood	1			1										2

Table 1. (cont.) SQUARE 186N208E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Class Y Proj. Points	3													3
Triangular preforms	1													1
Biface fragments	7													7
Flake biface gravers	1													1
Notched flakes	1													1
Retouched flakes	1													1
Utilized flakes	8													8
Yellow Chert														
Class 2 biface modified pebble	1													1
Biface fragments	1						1							2
Gray Chert														
Biface distal ends	1													1
Pink Chert														
Class Y Proj. Point	1													1
Flakes and Shatter	268	16	7	6	12	46	14	1						370
Fire-cracked rock	1545g	375g	187g	40g	62g	64g	10g	1g						
Pebbles	2130g	492g	488g	360g	400g	557g	69g	40g						
Sandstone														
Ground fragments	10	2												12
Un-ground fragments	158g	8g	12g	10g	3g	44g								
Limestone fragments	17g													
Petrified wood	1			1										2

Table 1. (cont.) SQUARE 186N209E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Class H Proj. Point	1													1
Class Y Proj. Point	2													2
Biface adze/ scrapers	1													1
Triangular preforms	2													2
Biface fragments	5													5
Retouched flakes	1					1								2
Utilized flakes	2													2
Utilized fire-cracked pebbles	2		1		1									4
Pink Chert														
Class Y Proj. Point	1													1
Flakes and Shatter	380	3	4	8	1	15	30	5	1					447
Fire-cracked rock	1931g	60g	303g	344g	20g	90g	9g	8g	1g					
Pebbles	2376g	110g	338g	343g	57g	750g	298g	111g	18g					
Sandstone														
Ground fragments	15					2								17
Un-ground fragments	283g	5g	11g	8g		24g								
Limestone fragments	19g					1g								
Petrified wood					1									1

Table 1. (cont.) SQUARE 187N206E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class Y Proj. Point	1													1
Small oval biface scraper		1												1
Class 4 biface preforms	1													1
Biface distal ends	3													3
Biface fragments	1	1												2
Uniface preforms						1								1
Retouched flakes						1								1
Utilized flakes		1												1
Yellow Chert														
Elongated cutting tool	1													1
Class 2 biface modified pebble					1									1
Gray Chert														
Biface fragments				1			1							2
Flakes and Shatter	47	9	1	4	3	6	4							74
Fire-cracked pebbles	1094g	644g	1020g	436g	35g	4g	8g							
Pebbles	1199g	264g	575g	456g	200g	111g	28g	27g						
Sandstone														
Ground fragments	6	4	3	1		2								16
Un-ground fragments	27g	72g	140g	105g	6g	35g	5g							
Hematite fragments		1g												

Table 1. (cont.) SQUARE 187N207E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Retouched flakes	2													2
Utilized flakes	1													1
Yellow Chert														
Uniface adze/ scrapers	1													1
Utilized flakes	1													1
Gray Chert														
Class I Proj. Point	1													1
Brown Chert														
Class J Proj. Point				1										1
Flakes and Shatter	41	8	2		4	10		2						67
Fire-cracked pebbles	1317g	829g	495g	246g	213g	150g	7g							
Pebbles	1144g	332g	343g	386g	138g	179g	24g	13g						
Sandstone														
Ground fragments	6	8	5	7	3									29
Un-ground fragments	221g	93g	23g	19g	16g	35g	1g							
Limestone fragments	12g													

Table 1. (cont.) SOUARE 187N208E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Class F Proj. Point	1													1
Class Y Proj. Point	1													1
Class 2 biface modified pebbles	1													1
Class 4 biface preforms	1													1
Biface fragments	3	2												5
Retouched flakes	4													4
Utilized flakes	2													2
Yellow Chert														
Class Y Proj. Point	1													1
Elongated cutting tool						1								1
Flakes and Shatter	196	11	9	10	7	18	19	6						276
Fire-cracked pebbles	1726g	946g	1507g	250g	102g	110g	9g	12g						
Pebbles	1960g	692g	936g	1187g	519g	1204g	150g	196g						
Sandstone														
Ground fragments	10	7	14	10										41
Un-ground fragments	290g	180g	33g	249g	60g	1g	2g	3g						
Limestone fragments	12g	7g												

Table 1. (cont.) SQUARE 187N209E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class H Proj. Point	1													1
Class Y Proj. Point	2													2
Medium oval biface scrapers	1													1
Biface fragments	6													6
Retouched flakes	5													5
Cores	1													1
Yellow Chert														
Medium oval biface scrapers	1													1
Elongated cutting tools	1													1
Class 2 biface modified pebbles	1													1
Biface fragments	1													1
Pink Chert														
Class Y Proj. Point	1													1
Flakes and Shatter	374	28	22	15	4	16	22	7						488
Fire-cracked rock	1467g	627g	480g	157g	24g	259g	16g							
Pebbles	2262g	566g	1205g	794g	92g	970g	217g	178g						
Sandstone														
Ground fragments	12	3	3	7	5		2							32
Un-ground fragments	216g	43g	53g	62g	10g	6g	71g							
Hematite fragments	1		7											8

Table 1. (cont.) SQUARE 196N206E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	Total
Red Chert													
Class Y Proj. Point	1	1											2
Expanded base drill		1											1
Biface fragments		2											2
Utilized flakes			2										2
Cores			1										1
Gray Chert													
Biface fragments						1							1
Flakes and Shatter	220	79	48	20	11	8	13	9	7	10			425
Fire-cracked rocks	286g	346g	590g	548g	413g	868g	258g	45g	23g	31g	5g	49g	
Pebbles	849g	315g	632g	259g	428g	958g	704g	390g	412g	1697g	1053g	913g	
Sandstone													
Pitted Anvil Stones			1										1
Ground Fragments	2	1	10	3	1								17
Unground Fragments	47g	34g	103g	76g	12g	11g	3g	9g	3g	33g			
Limestone Fragments	16g												
Hematite Fragments	1g		1g										

Table 1. (cont.) SQUARE 196N207E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	Total
Red Chert													
Class Y Proj. Point	2												2
Medium oval biface scrapers	1												1
Class 2 modified pebbles			1										1
Biface distal ends	1												1
Biface fragments	1			1			1						3
Yellow Chert													
Biface adze/ scrapers		1	1										2
Elongated cutting tools	1												1
Biface fragments				1									1
Gray Chert													
Class V Proj. Points		1											1
Quartzite													
Hammerstones	1												1
Flakes and Shatter	147	28	20	8	8	7	6	5	5	8			242
Fire-cracked rock	686g	411g	525g	442g	277g	185g	92g	92g	87g	20g	5g		
Pebbles	525g	255g	501g	486g	635g	1482g	466g	186g	403g	892g	1511g	1128g	
Sandstones													
Ground fragments	4	1	3	3		2		1	1	4			19
Un-ground fragments	60g	31g	127g	565g	43g	26g	47g	56g	41g	17g			
Limonite fragments	14g	1g		1g									

Table 1. (cont.) SQUARE 196N208E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	Total
Red Chert													
Class F Proj. Point	1												1
Class Y Proj. Point	1												1
Class 1 modified pebbles				1									1
Biface fragments	4	2	1			1							8
Notched flakes			1										1
Retouched flakes	1												1
Utilized flakes	2												2
Utilized fire-cracked rock	2	1											3
Yellow Chert													
Biface distal ends	1							1					2
Cores													
Gray Chert													
Class R Proj. Point		1											1
Biface distal ends	1												1
Flakes and Shatter	261	70	49	12	18	17	3	12	31	25			498
Fire-cracked rock	430g	410g	896g	455g	387g	88g	52g	31g	6g	3g			
Pebbles	569g	195g	617g	337g	440g	1160g	390g	110g	405g	859g	1344g	1121g	
Sandstone													
Ground fragments	3	3			1								7
Un-ground fragments	39g	90g	86g	36g	21g	7g		45g	1g	1g		1g	
Limestone fragments	137g	14g											
Limonite fragments		2g											
Petrified Wood									1				1

Table 1. (cont.) SQUARE 196N209E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Biface adze/ scrapers	1													1
Class 2 modified pebbles	2													2
Biface distal ends		1			1									2
Biface fragments	1	2												3
Notched flakes	1													1
Retouched flakes	2													2
Yellow Chert														
Elongated cutting tools				1										1
Uniface adze/ scrapers						1								1
Flakes and Shatter	225	84	14	10	17	9		10	15	5				389
Fire-cracked rock	886g	529g	248g	297g	417g	120g	40g	44g	78g					
Pebbles	1073g	456g	203g	410g	338g	415g	397g	368g	519g		2386g	1295g	1477g	
Sandstone														
Ground fragments	4	6	2			2	1		1					16
Un-ground fragments	132g	90g	97g	65g	149g	4g	10g	9g	163g					
Limestone fragments	24g	12g		1g	1g									
Limonite fragments			1g											

Table 1 . (cont.) SQUARE 197N206E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Class Y Proj. Point		2												2
Elongated cutting Tools										1				1
Biface fragments									1					1
Yellow Chert														
Class 1 modified pebbles						1								1
Class 2 modified pebbles						1								1
Biface fragments	1		1											2
Gray Chert														
Biface fragments						1								1
Flakes and Shatter	46	241	83	38	13	13	13	8	15	13				483
Fire-cracked rock	154g	507g	530g	736g	875g	900g	171g	81g	49g	10g	3g	2g		
Pebbles	123g	777g	340g	540g	450g	927g	1275g	354g	561g	1250g	1704g	731g		
Sandstone														
Ground fragments				3		4	3	1						11
Un-ground fragments	37g	25g	55g	286g	186g	45g	22g	30g	22g	5g				
Pitted anvil stones							1							1
Limestone fragments		38g	2g											
Hematite fragments			1g	6g	5g		1g							
Limonite														
Bannerstones				1										1
Fragments							1g							

Table 1. (cont.) SQUARE 197N207E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class F Proj. Point		1												1
Class Y Proj. Point	1													1
Class 1 modified pebble	1													1
Class 2 modified pebble		1												1
Class 2 biface preforms			1											1
Biface distal ends		1												1
Biface fragments		2												2
Utilized flakes		2												2
Red/Gray Chert														
Class D Proj. Point					1									1
Yellow Chert														
Biface adze/ scrapers				1										1
Class 2 modified pebbles			1	1						1				3
Class 1 biface preforms				1						1				2
Denticulated biface										1				1
Retouched flakes					1				1					2
Flakes and Shatter	28	153	52	51	9	4	7	7	14	27	5		1	358
Fire-cracked rocks	89g	323g	153g	431g	554g	326g	85g	51g	75g	35g	8g	4g	1g	
Pebbles	154g	884g	458g	357g	475g	394g	1062g	508g	589g	341g	1295g	1246g	870g	
Sandstone														
Ground fragments			2	1	3	5	5							16
Un-ground fragments	10g	24g	15g	292g	115g	94g	7g	16g	2g	15g	3g	2g	1g	
Limestone fragments	1g	200g												
Hematite fragments	1g													
Limonite fragments	1g		8g	5g										

Table 1 . (cont.) SQUARE 197N208E

Artifact type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	Total
Red Chert													
Shaft drills		1											1
Biface fragments	3	1							1				5
Biface flake perforators	1												1
Retouched flakes	1									1			2
Cores													
Yellow Chert													
Class 2 biface modified pebbles		1	1				1						3
Biface fragments		1											1
Uniface modified pebbles			1						1				2
Cores													
Brown Claystone													
Large oval biface scrapers		1											1
Flakes and Shatter	254	126	61	25	7	8	4	6	35	15	1		
Fire-cracked rocks	760g	439g	232g	535g	283g	265g	33g	8g	17g	9g		1g	
Pebbles	910g	662g	247g	336g	285g	918g	1250g	119g	506g	685g	1363g	1363g	
Sandstone													
Abraiders	1												1
Pitted anvil stones		1											1
Ground fragments	7	3	5	5	6	2	2		2		1		33
Un-ground fragments	76g	160g	141g	75g	10g	27g	19g	18g	10g	7g			
Limestone fragments	63g	81g		1g									
Hematite fragments				2g	1g								
Limonite fragments				3g	1g								
Petrified wood		1											1

Table 1. (cont.) SQUARE 197N209E

Artifact Type	Levels 1	2	3	4*	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class T Proj. Point					1									1
Triangular perform	1													1
Biface distal ends			1		1									2
Biface fragments	5													5
Notched flakes	1													1
Utilized fire-cracked rocks			1		1									2
Yellow Chert														
Class 2 modified biface pebbles								1						1
Uniface modified pebbles								1						1
Hammerstones			1											1
Gray Chert														
Biface fragments	1													1
Tallahatta Quartzite														
Biface distal ends	1													1
Flakes and shatter	315	41	66		7	6	7	5	29	6	1			483
Fire-cracked rock	368g	59g	253g		389g	237g	70g	12g	46g	13g	7g		1g	
Pebbles	781g	128g	571g		434g	417g	817g	245g	450g	974g	1245g	1265g	1336g	
Sandstone														
Ground fragments	2				3		1	2	4	1				13
Un-ground fragments	84g	13g	38g		56g	9g	27g	90g	70g	1g				

*Material lost

Table 1. (cont.) SQUARE 198N206E

Artifact Type	Levels												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Red Chert													
Class Y proj. points	4												4
Biface adze/ scrapers			1										1
Small, oval biface scrapers						1							1
Triangular preforms	1												1
Biface distal ends	2												2
Biface fragments	2	1			1								4
Flake biface gravers	1												1
Uniface adze/ scrapers	1												1
Retouched flakes			1							1			2
Utilized flakes	17	1											18
Yellow Chert													
Biface distal ends	1												1
Biface fragments	1												1
Retouched flakes	1												1
Utilized flakes	1												1
Gray Chert													
Biface distal ends	1												1
Biface fragments				1									1
White Chert													
Utilized flakes	2												2
Tallahatta Quartzite													
Class U proj. point		1											1

(Continued on next page)

Table 1. SQUARE 198N206E (Cont.)

Artifact Type	Levels												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Flakes and Shatter	461	164	141	43	21	21	4	22	10	6			893
Fire-cracked rock	814g	238g	494g	246g	280g	159g	33g	21g	2g	1g	1g		
Pebbles	1395g	270g	523g	257g	606g	1537g	551g	390g	617g	1303g	510g	311g	
Sandstone													
Ground feagments	2			2		4	3	1					12
Un-ground fragments	111g	1g	389g	46g	110g	34g	11g	7g	3g	2g	1g		
Limestone fragments	140g	32g											
Hematite fragments	1g												

Table 1. (cont.) SQUARE 198N207E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Biface distal ends	1									1				2
Biface fragments	1													1
Yellow Chert														
Biface adze/ scrapers				1										1
Class 2 biface modified pebbles				1	1									2
Biface fragments			1											1
Tallahatta Quartzite														
Biface fragments										1				1
Mottled Pink Chert														
Class M Proj. Points		1	1											2
Flakes and Shatter	148	94	70	208	160	16	11	7	3	19	29	5		770
Fire-cracked rock	386g	317g	145g	343g	633g	503g	246g	79g	11g	75g	6g	1g	23g	
Pebbles	518g	245g	99g	331g	527g	334g	531g	1254g	327g	679g	990g	1477g	912g	
Sandstone														
Ground fragments	3	2	1	6	9	5		1		6	1			34
Un-ground fragments	59g	9g	47g	37g	169g	49g	29g	7g	12g	72g	62g			
Limestone fragments	25g	5g	47g											
Hematite fragments				2g										
Limonite fragments				1g										

Table 1. (cont.) SQUARE 198N208E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Utilized flakes	1													1
Yellow Chert														
Class Y Proj. Points	1													1
Utilized flakes	1													1
Gray Chert														
Shaft drills					1									1
Flakes and Shatter	32	92	19	12		5	2	4			3			169
Fire-cracked rock	374g	90g	80g	323g	125g	211g	114g	247g	83g	16g	3g			
Pebbles	366g	268g	121g	628g	37g	345g	176g	242g	70g	128g	93g	591g	154g	
Sandstone														
Ground fragments	10	2	1	4		7	1	1	1					27
Un-ground fragments	37g	22g	1g	92g	8g	46g		6g	27g	2g				
Limestone fragments	21g	21g	1g											

Table 1. (cont.) SQUARE 198N209E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class Y Proj. Points	2													2
Medium oval biface scrapers	1													1
Expanded base drills				1										1
Class 2 biface preforms			1											1
Biface distal ends	1													1
Biface fragments	2	3	2	4			1							12
Notched flakes			1											1
Utilized flakes	1		1											2
Yellow Chert														
Small oval biface scrapers				1										1
Triangular preforms		1												1
Biface distal ends		1												1
Biface fragments						1			1					2
Utilized flakes	1													1
Pink Chert														
Class W Proj. Points					1									1
Class Y Proj. Points		1												1
Flakes and Shatter	157	60	86	84	28	38	13	29	5	15	4			519
Fire-cracked rock	117g	341g	222g	432g	214g	414g	210g	269g	62g	147g				
Pebbles	399g	367g	362g	398g	163g	308g	256g	447g	201g	304g	261g	2648g	1352g	
Sandstone														
Ground fragments			4	7	5	2		6	3	2	3			32
Un-ground fragments	24g	1g	45g	314g	15g	21g	36g	8g	32g	23g				
Limestone fragments	1g	13g	94g	13g			1g	1g						
Hematite fragments				2g										
Limonite fragments				1g										
Petrified wood			1											1

Table 1. (cont.) SQUARE 199N206E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Red Chert														
Class Y Proj. Point	1													1
Class 2 biface modified pebble	1													1
Class 1 biface preform				1										1
Class 4 biface preform										1				1
Biface fragments	3	1	2		1									7
Retouched flakes		1	1	1										3
Utilized flakes		3												3
Utilized fire-cracked rock	1													1
Yellow Chert														
Biface adz/scrapers					1									1
Class 3 biface preforms				1										1
Uniface modified pebble	1													1
Brown Siltstone														
Bannerstones				1										1
Flakes and Shatter	32	21	11	38	24	3	5		4	5	3	2	1	149
Fire-cracked rock	230g	118g	50g	220g	213g	71g	88g	15g	112g		3g			
Pebbles	393g	403g	158g	402g	227g	108g	381g	362g	230g	327g	73g	218g	69g	
Sandstone														
Ground fragments	1		1	8	5	2	1			1				19
Un-ground fragments	23g	13g	29g	13g	57g	33g	79g	12g		26g	24g	5g	2g	
Limestone fragments	5g	18g												

Table 1. (cont.) SQUARE 199N207E

Artifact Type	Levels													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Red Chert														
Shaft drills			1											1
Biface fragments	1	1	3											5
Retouched flakes			2											2
Utilized fire-cracked rocks	1													1
Yellow Chert														
Biface adze/scrapers			2											2
Class 1 biface modified pebble			1											1
Biface fragments	1				1									2
Uniface modified pebbles					1									1
Hammerstones				1										1
Gray Chert														
Biface fragments			1											1
Flakes and Shatter	9	86	71	18		9		3	7	4	2			209
Fire-cracked rock	25g	499g	514g	331g	317g	168g	185g	142g	259g	17g	15g			
Pebbles	25g	449g	800g	241g	261g	533g	599g	413g	209g	234g	428g	72g	93g	
Sandstone														
Ground fragments		4	9	4	12	5		6	4					44
Un-ground fragments		103g	83g	28g	101g	7g	13g	3g		13g	1g			
Limestone fragments		215g												
Hematite fragments					6g									
Limonite fragments			1g											
Petrified wood					1									1

Table 1. (cont.) SQUARE 199N208E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Red Chert															
Triangular preforms	1														1
Biface distal ends			1												1
Biface fragments	2	5		1											8
Retouched flakes	2	1													3
Utilizes fire-cracked rocks		1													1
Yellow Chert															
Small oval biface scrapers			1												1
Shaft drills				1											1
Class 2 biface modified pebbles			1												1
Uniface modified pebbles				1											1
Uniface preforms				1											1
Tallahatta Quartzite															
Biface distal ends				1											1
Quartzite															
Class C Proj. Points											1				1
Flakes and Shatter	99	252	74	129	53	17	8	11	10	10	11	3		5	682
Fire-cracked rock	193g	356g	220g	529g	395g	374g	167g	122g	46g	42g	18g	3g		3g	
Pebbles	290g	518g	341g	869g	339g	448g	390g	379g	393g	243g	467g	918g	235g	297g	
Sandstone															
Ground fragments	2			1	2			1	1	2	1				10
Un-ground fragments	28g	47g	35g	293g	167g	136g	112g	8g	20g	28g	28g	23g			
Abraiders	1														1
Limestone fragments		11g													
Petrified wood							1								1

Table 1. (cont.) SQUARE 199N209E

Artifact Type	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Red Chert															
Class Y Proj. Point	2	1													3
Class 3 biface preforms		1													1
Biface distal ends		2	1												3
Biface fragments	1	1	2	1											5
Retouched flakes		1													1
Cores				1						1					2
Yellow Chert															
Class 1 biface modified pebble		1													1
Biface distal ends		2													2
Biface fragments		1													1
White Chert															
Biface fragments									1						1
Flakes and Shatter	78	350	71	79	32	12	19	4	13	20	9			5	692
Fire-cracked rock	253g	604g	125g	399g	309g	331g	195g	71g	26g	20g	4g		4g	5g	
Pebbles	290g	673g	425g	298g	364g	180g	416g	465g	364g	298g	118g		426g	1418g	
Sandstone															
Ground fragments		6	1	10	4		5		2	1					29
Un-ground fragments	22g	124g	15g	58g	29g	34g	93g	21g	35g	9g					
Abraiders		1													1
Limestone fragments		45g			1g										
Limonite fragments				36g											

However, similarities between the Kellogg points and established types are noted if applicable. In order to maintain some consistency with past point descriptions and to avoid further confusing the area of descriptive technology, reliance has been placed on much of the terminology utilized by Cambron and Hulse (1964) rather than attempt to devise a new system. It is felt that attempts to make a rigid taxonomy out of projectile point identification have more often turned out to be so complex and confusing that the purpose was defeated. Still the limitations of The Alabama Handbook of Archaeology (Cambron and Hulse 1964) are recognized and only that material which is applicable and meaningful has been used.

Points were placed in a class according to several shared attributes or characteristics. These characteristics include the nature of the hafting area, the shoulder form, the flaking technique, grinding or lack thereof, quality of workmanship, and size. The blade and distal end form was considered to be of less importance because artifacts were often subjected to resharpening and wear.

In the projectile point descriptions below, references are presented for previously identified points having similar forms and characteristics as the Kellogg specimens. If no reference is cited the point(s) under discussion have either not been identified before or applicable references were not discovered. When the provenience of one or more of the types found at Kellogg lends itself to helping clarify the cultural affiliation of a point, such proveniences will be stated. However, because of the extensive disturbance of the general midden by aboriginal digging and modern cultuvation of the Woodland and Mississippian levels, the upper levels and post-Archaic pits often contain a mixture of cultural materials. If evidence does not indicate definite non-association the provenience of points found in features will be stated because of the possibility that there may be valid associations. Data on each individual point in each class discussed below are presented in Table 3 , which refers the reader to the particular photographic plate on which each is illustrated.

A problem encountered in the Central Tombigbee River Valley is that of determining to what extent and in what ways during each cultural period various lithic materials were being exploited. In general the basic lithic raw materials used for making the flaked tools found at Kellogg consisted of locally available water deposited gravel from the Tuscaloosa Formation. This gravel, most of which is a chert of a yellow-tan color, was available in the river bed and in places where the intact deposit was exposed by erosion. Probably because of the inferior quality of most of this gravel, the general tendency during most of the Archaic period was to use it in making heavy duty tools but to forego it in favor of exotic lithic materials for the production of important specialized tools such as projectile points/knives and drills. One of the exotic materials sometimes used, Fort Payne chert, commonly occurs to the north in the Middle Tennessee Valley. A second raw material type, and one that was definitely not available locally, was Tallahatta Quartzite, which occurs to the south in west central Alabama and east central Mississippi (Dunning 1964).

By Middle Woodland times, evidence points to a greater utilization of the common river gravel chert for the manufacture of projectile points and all types of other tools. Partly responsible for this was the more pronounced practice of heat treating to inhance the conchoidal properties of the chert. Thus, during most of the Woodland and the succeeding Mississippian periods lithic tools were made from heat-treated river chert. This heat treatment resulted in a color transformation of the material from its original color (usually yellow-tan) to a red color (see Ensor 1978 for a more detailed discussion of the above).

That most of the red chert artifacts and debitage found on Tombigbee sites is a result of heat treating is an accepted fact among archaeologists but so far no solution has been found to the problem of distinguishing natural red chert from heated chert.
Rucker (1974:10-11) has reported that some natural red chert is present in the river gravels and some Fort Payne chert is also red.

Table 2. Lithics from Features

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Yellow Chert																												
Biface Adze/scraper																												
Medium, oval biface scraper																		1										
Elongate biface cutting tool																												
Class 1 modified biface pebble																												
Class 2 modified beface pebble																												
Class 2 biface preform																												
Class 4 biface preform																												
Triangular biface preform																												
Biface distal ends																												
Class 1 biface fragments																												
Notched flake																												
Uniface modified pebble																												
Uniface preform																												
Cores																												
Retouched flakes																												
Utilized flakes																												
Biface thinning flakes				1																								
Decortification flakes					12				1		4				3	2											1	5
Non-utilized flakes	12		1	2	16				3		17	15		1	6	5											1	4
Shatter	1																											
Red Chert																												
Biface Adze/scraper																												
Medium, oval biface scraper																												
Elongate biface cutting tool																												
Class 1 modified biface pebble																												
Class 2 modified biface pebble																												
Class 2 biface preform																												
Class 4 biface preform															1													
Triangular biface preform																												
Biface distal ends											1				1													
Class 1 biface fragments					1							1			2													
Notched flake											1																	
Uniface modified pebble																												
Uniface preform																												
Cores																												
Retouched flakes																												
Utilized flakes	2				3							2														1		2
Biface thinning flakes	2				1						1																	
Decortification flakes	5			2	24	6			3		19	2	1		5	1												
Non-utilized flakes	39	2	10	2	50	1	3		8		26	6			13	6		1			3	2	1			3		31
Utilized fire-cracked rocks																												
Shatter	4				2											1												
Gray Chert																												
Biface distal ends																										2		
Class 1 biface fragments					1																					1		
Biface thinning flakes					1																					1		1
Non-utilized flakes					2							2			2													1
Shatter																												
White Chert																												
Non-utilized flakes																												
Tallahatta Quartzite																												
Non-utilized flakes	1			1																								
Shatter					1																							
Ferruginous Sandstone	2																											
Non-utilized flakes																												
Ground & Polished Artifacts																												
Siltstone gorget																										1		
Limonite bannerstone																										1		
Ground Sandstone																												
Pitted anvil stone																												
Abraider																										1		
Mortar	1																											
Pestle																												
Ground sandstone fragments	4							1				12		1	1											1		3
Other Lithic Artifacts																												
Hammerstone (yellow chert)																												
Miscellaneous Lithic Material																												
Pebbles (grams)	378	31	37	19	339	1	1		53	1	108	294	24	19	160	46		102	45	32	8	6	1	6	11	1090	8	217
Fire-cracked rock (grams)	118	10	11	27	433	1	29		28	1	112	360	26	2	152	24	1	22			9	27	1		1	132	11	314
Sandstone (grams)	29	16	1	1	45	1	14				4	44	1		18	1						1				1		83
Limestone (grams)	28				2						5			1							2							14
Limonite (grams)															1	1								1				
Hematite (grams)	2																											
Petrified wood																1												

Table 2. (cont.)

	30	31	32	33	34	35	36	37	38	40	41	42	43	44	45	46	47	48	50	51	52	54	55	56	57	58	59	61
Yellow Chert																												
Biface Adze/scraper																									1			
Medium, oval biface scraper																												
Elongate biface cutting tool																												
Class 1 modified biface pebble																												
Class 2 modified biface pebble														1														
Class 2 biface preform																												
Class 4 biface preform																												
Triangular biface preform																												
Biface distal ends																												
Class 1 biface fragments																												
Notched flake																												
Uniface modified pebble																												
Uniface preform																									5			
Cores																												
Retouched flakes																												
Utilized flakes																												
Biface thinning flakes																												
Decortification flakes	1					1							2	2				2					1			1		
Non-utilized flakes						1							3	14								1	4			4		
Shatter														1									1					
Red Chert																												
Biface Adze/scraper																												
Medium, oval biface scraper																												
Elongate biface cutting tool														1														
Class 1 modified biface pebble														1														
Class 2 modified biface pebble																												
Class 2 biface preform														2														
Class 4 biface preform																												
Triangular biface preform																												
Biface distal ends																											1	
Class 1 biface fragments														1														
Notched flake								1																				
Uniface modified pebble														1														
Uniface preform																												
Cores																												
Retouched flakes																												
Utilized flakes						1							1	11									1					
Biface thinning flakes														7														
Decortification flakes		2								1			1	63		3							5			1		
Non-utilized flakes	1	4				1		2				1	2	202	1			3			1	2	34	1		13	3	
Utilized fire-cracked rocks																												
Shatter										1													1					
Gray Chert																												
Biface distal ends																												
Class 1 biface fragments																												
Biface thinning flakes																												
Non-utilized flakes		1												1								1	1			1		
Shatter														1														
White Chert																												
Non-utilized flakes																												
Tallahatta Quartzite																												
Non-utilized flakes																												
Shatter																												
Ferruginous Sandstone																												
Non-utilized flake																												
Ground & Polished Artifacts																												
Siltstone gorget																												
Limonite bannerstone																												
Ground Sandstone																												
Pitted anvil stone																												
Abraider																												
Mortar																												
Pestle																												
Ground sandstone fragments						3								16								1	4					
Other Lithic Artifacts																												
Hammerstone (yellow chert)														1														
Miscellaneous Lithic Material																												
Pebbles (grams)		6	1		69	186	1	17	4	4	17	35	3	2219	5	1	20	88	27	6	11	11	488	11		88	1	1
Fire-cracked rock (grams)	1	1			2	134		3	7	4	3	17	3	3672	1	15	164	41		2		19	252	7		28	19	1
Sandstone (grams)		1				51					1			111									30			16	1	1
Limestone (grams)																												
Limonite (grams)																												
Hematite (grams)																												
Petrified wood												1																

Table 2. (cont.)

	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	78	79	80	81	82	83	84	85	86	87	88	90	91	92
Yellow Chert																													
Biface Adze/scraper					1																	3							
Medium, oval biface scraper																													
Elongate biface cutting tool																													
Class 1 modified biface pebble																						2							
Class 2 modified biface pebble																													
Class 2 biface preform																													
Class 4 biface preform																													
Triangular biface preform																													
Biface distal ends																													
Class 1 biface fragments																						1							
Notched flake																													
Uniface modified pebble																						2							
Uniface preform																													
Cores																													
Retouched flakes																													
Utilized flakes																													
Biface thinning flakes																							1						
Decortification flakes					4							1	2		1							43	1	1			1		
Non-utilized flakes					9							2	4				1		1			101	4	1		1			
Shatter					2										2							15	1						
Red Chert																													
Biface Adze/scraper																													
Medium, oval biface scraper																						1							
Elongate biface cutting tool																						1							
Class 1 modified biface pebble																													
Class 2 modified biface pebble																													
Class 2 biface preform					1																	3							
Class 4 biface preform																						3							
Triangular biface preform																													
Biface distal ends																						3							
Class 1 biface fragments																						1							
Notched flake																													
Uniface modified pebble																													
Uniface preform																													
Cores																													
Retouched flakes																						1							
Utilized flakes					2																	14	1				1		
Biface thinning flakes																						16							
Decortification flakes				1	7	1						5	1						1		2	346	4	1					
Non-utilized flakes	1	4		1	20	1						9							2	2	3	874	19	1			11		
Utilized fire-cracked rocks																							1						
Shatter															1				2	1		9							
Gray Chert																													
Biface distal ends																													
Class 1 biface fragments																													
Biface thinning flakes																													
Non-utilized flakes																						12							
Shatter																													
White Chert																													
Non-utilized flakes																						1							
Tallahatta Quartzite																													
Non-utilized flakes																						10							
Shatter																						2							
Ferruginous Sandstone																													
Non-utilized flakes															1							4							
Ground & Polished Artifacts																													
Siltstone gorget																													
Limonite bannerstone																													
Ground sandstone																													
Pitted anvil stone																													
Abrader																													
Mortar																													
Pestle																													
Ground sandstone fragments					11							2	1										2	2	1				
Other Lithic Artifacts																													
Hammerstone (yellow chert)																													
Miscellaneous Lithic Material																													
Pebbles (grams)		2	1	12	250	8		2	1		47	15	24		9			2	4		1	7456	282	37		23	401	34	16
Fire cracked rock (grams)	1	2		67	233	1	1	2		1	139	20	14		10		2	10	6		1	10363	72	25		12	446	3	
Sandstone (grams)		1		34	25							5	18		1				1			1303	131	5	1	1	77		
Limestone (grams)												58										1337		1			1		
Limonite (grams)					29																								
Hematite (grams)																						18							
Petrified wood																						1							

Table 2. (cont.)

	93	94	95	96	97	98	99	100	101	103	104	105	106	107	108	109	110	111	112	113	114	115a	115b	115c	115d	115e
Yellow Chert																										
Biface Adze scraper						1																				
Medium, oval biface scraper																										
Elongate biface cutting tool							1																			
Class 1 modified biface pebble																										
Class 2 modified biface pebble																										
Class 2 biface preform																										
Class 4 biface preform																										
Triangular biface preform																										
Biface distal ends																										
Class 1 biface fragments															1											
Notched flake																										
Uniface modified pebble																										
Uniface preform																										
Cores																										
Retouched flakes																										
Utilized flakes																										
Biface thinning flakes																										
Decortification flakes				1			7										1									
Non-utilized flakes		3	1	3	1				2		1	5					5							1		1
Shatter																										
Red Chert							2		1																	
Biface Adze/scraper																										
Medium, oval biface scraper																										
Elongate biface cutting tool																										
Class 1 modified biface pebble																										
Class 2 modified biface pebble																										
Class 2 biface preform																										
Class 4 biface preform																										
Triangular biface preform																										
Biface distal ends																										
Class 1 biface fragments															1											
Notched flake																										
Uniface modified pebble																										
Uniface preform																										
Cores																										
Retouched flakes																										
Utilized flakes		1		4			1		4						1											
Biface thinning flakes																	1									
Decortification flakes		10		2			4		11	1		9			2		1									
Non-utilized flakes		16		17	4	1	17	1	19	3	2	22		1	2	1	5	1		2	1	3	4	1	2	5
Utilized fire-cracked rocks																										
Shatter							1		1																	
Gray Chert																										
Biface distal ends																										
Class 1 biface fragments																										
Biface thinning flakes																										
Non-utilized flakes		2										1				1										
Shatter																								1		1
White Chert																										
Non-utilized flakes																										
Tallahatta Quartzite																										
Non-utilized flakes																										
Shatter																										
Ferruginous Sandstone										1																
Non-utilized flakes																										
Ground & Polished Artifacts																										
Siltstone gorget																										
Limonite bannerstone																										
Ground Sandstone																										
Pitted anvil stone																										
Abraider																										
Mortar																										
Pestle																										
Ground sandstone fragments			2		1				2			3		1	1							1		2		
Other Lithic Artifacts																										
Hammerstone (yellow chert)																										
Miscellaneous Lithic Material																										
Pebbles (grams)	1	342	180	83	4	22	141	12	254	410	9	19	11	5	75	80	59		2	1	14	23	9	27	24	77
Fire-cracked rock (grams)	6	51[illegible]	22	99	18	28	229	38	105	79	1	64	12	11	90	60	18	1	1	105	2	8	4	19	7	42
Sandstone (grams)		13	5		8		5	4	7	36			1	2	4	6	1			3	5	4		1	1	4
Limestone (grams)					20		2		10													2		2	1	
Limonite (grams)																										
Hematite (grams)																										
Petrified wood																										

Table 2 (cont.)

	115f	115g	115h	115i	115j	115k	116	117	118	119	120	121	122	123	124	125	126	127	128	131	132	133	134	135	136	137	138	140
Yellow Chert																												
Biface Adze scraper																			1									
Medium oval biface scraper																												
Elongate biface cutting tool																												
Class 1 modified biface pebble																												
Class 2 modified biface pebble																												
Class 2 biface preform																												
Class 4 biface preform																												
Triangular biface preform																												
Biface distal ends																												
Class 1 biface fragments																												
Notched flake																												
Uniface modified pebble																												
Uniface preform																												
Cores																												
Retouched flakes																												
Utilized flakes											1																	
Biface thinning flakes														1														
Decortication flakes								1			1			5	1	1			1					1				
Non-utilized flakes	3					1		1		3	1		1	16	2	5												
Shatter																										1		
Red Chert																												
Biface Adze scraper																												
Medium oval biface scraper														1														
Elongate biface cutting tool																												
Class 1 modified biface pebble																												
Class 2 modified biface pebble																1												
Class 2 biface preform																												
Class 4 biface preform																												
Triangular biface preform																												
Biface distal ends									2																			
Class 1 biface fragments																	1											
Notched flake																												
Uniface modified pebble																												
Uniface preform																												
Cores																												
Retouched flakes																												
Utilized flakes										2	1			4											1			
Biface thinning flakes		1						1						3		4									1			
Decortication flakes	1		5			3		1	1	7		7	2	31	3	17				1								
Non-utilized flakes	4	12	1		3	1		11	1	5	12	8	4	153	10	33									2			
Utilized fire-cracked rocks														1														
Shatter	1													1	1				1									
Gray Chert																												
Biface distal ends																												
Class 1 biface fragments																												
Biface thinning flakes															1													
Non-utilized flakes	1									1				4	2													
Shatter																												
White Chert																												
Non-utilized flake																												
Tallahatta Quartzite																												
Non-utilized flakes	1													1														
Shatter																												
Ferruginous Sandstone																												
Non-utilized flakes																												
Ground & Polished Artifacts																												
Siltstone gorget																												
Limonite bannerstone																												
Ground Sandstone																												
Pitted anvil stone																	1											
Grinder																												
Mortar																												1
Pestle																												
Ground sandstone fragments			1		1			1	1		2	9		7	1	2								1	1			
Other Lithic Artifacts																												
Hammerstone (yellow chert)																												
Miscellaneous Lithic Material																												
Pebbles (grams)	57	35	124	23	23	26		97	22	77	44	71	21	369	61	[illegible]				1	10	3	140	13	22		11	
Fire-cracked rock (grams)	29	70	26	4	57	[illegible]	1	[illegible]	1	65	54	47	[illegible]	[illegible]	11	65			4	1			[illegible]	[illegible]	[illegible]	96	14	
Sandstone (grams)		[illegible]	[illegible]		1			[illegible]		[illegible]	5	1	1	120	[illegible]	22								[illegible]	1			
Limestone (grams)		[illegible]				[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]															
Limonite (grams)																												
Hematite (grams)																												
Petrified wood																												

AD-A102 243 MISSISSIPPI STATE UNIV MISSISSIPPI STATE DEPT OF ANTH--ETC F/G 5/6
THE KELLOGG VILLAGE SITE INVESTIGATIONS, CLAY COUNTY, MISSISSIP--ETC(U)
SEP 80 J R ATKINSON, J C PHILLIPS, R WALLING DACW01-77-C-0015

UNCLASSIFIED NL

2 OF 4
AD A
102243

Table 3. Projectile Points/Knives

Class	Specimen #	Plate	Provenience	Material	Class	Specimen #	Plate	Provenience	Material
A	1	6a	surface	mottled pink chert	Y	1	9d	Burial 7	pink chert
B	1	6b	Feature 84	red chert		2	9e	Burial 7	pink chert
C	1	6c	199N 208E L.11	buff quartzite		3	9f	Burial 7	red chert
D	1	6d	197N 207E L.5	red-gray chert		4	9g	Burial 7	red chert
E	1	6e	Feature 84	red-gray chert		5	9h	Burial 7	red chert
	2	6f	surface	red chert		6	9i	Feature 1	red chert
	3	6g	surface	red chert		7	9j	Feature 31	pink chert
F	1	6h	Feature 84	red chert		8	9k	Feature 62	pink chert
	2	6i	196N 208E L.1	red chert		9	9l	Feature 121	brown chert
	3	6j	187N 208E L.1	red chert		10	9m	196N 208E L.1	red chert
	4	6k	197N 207E L.2	red chert		11	9n	196N 207E L.1	red chert
	5	6l	surface	red chert		12	9o	196N 207E L.1	red chert
	6	6m	surface	red chert		13	9p	198N 209E L.1	red chert
	7	6n	surface	red chert		14	9q	198N 209E L.2	pink chert
	8	6o	Bu. 37 fill	red chert		15	9r	198N 209E L.1	red chert
G	1	6p	Feature 11	red chert		16	9s	198N 206E L.1	red chert
	2	6q	Feature 44	red chert		17	9t	198N 206E L.1	red chert
H	1	6r	Feature 84	red chert		18	9u	198N 206E L.1	red chert
	2	6s	186N 209E L.1	red chert		19	9v	198N 206E L.1	red chert
	3	6t	187N 209E L.1	red chert		20	9w	196N 206E L.1	red chert
	4	7a	surface	red chert		21	9x	196N 206E L.2	red chert
	5	7b	surface	red chert		22	9y	197N 209E L.1	red chert
I	1	--	187N 207E L.1	gray chert		23	9z	199N 209E L.1	red chert
J	1	7c	Feature 85	red-gray chert		24	9aa	199N 209E L.1	red chert
	2	7d	187N 207E L.4	brown chert		25	9bb	199N 209E L.2	red chert
K	1	7e	186N 207E L.2	red chert		26	9cc	197N 206E L.2	red chert
	2	7f	surface	red chert		27	9dd	197N 206E L.2	red chert
	3	7g	surface	red chert		28	9ee	186N 209E L.1	red chert
L	1	7h	Feature 44	mottled pink chert		29	9ff	186N 209E L.1	red chert
	2	7i	Feature 88	red chert		30	9gg	186N 209E L.1	brown chert
	3	7j	surface	red chert		31	9hh	199N 206E L.1	red chert
	4	7k	surface	red chert		32	9ii	186N 208E L.1	red chert
M	1	7l	198N 207E L.2	mottled pink chert		33	9jj	186N 208E L.1	red chert
	2	7m	198N 207E L.3	mottled pink chert		34	9kk	186N 208E L.1	red chert
N	1	7n	Feature 5	red chert		35	9ll	186N 208E L.1	pink chert
	2	7o	186N 207E L.2	pink fossiliferous chert		36	9mm	187N 209E L.1	red chert
	3	7p	surface	red-gray chert		37	9nn	187N 209E L.1	red chert
O	1	8a	surface	gray chert		38	9oo	187N 209E L.1	pink chert
	2	8b	surface	red chert		39	9pp	187N 206E L.1	red chert
P	1	8c	surface	red chert		40	9qq	187N 208E L.1	red chert
Q	1	8d	surface	red chert		41	9rr	187N 208E L.1	yellow chert
R	1	8e	196N 208E L.2	gray chert		42	9ss	198N 208E L.1	yellow chert
S	1	8f	surface	Tallahatta quartzite		43	9tt	186N 207E L.1	yellow chert
T	1	8g	197N 209E L.5	red chert		44	9uu	186N 207E L.1	red chert
	2	8h	surface	red chert		45	9vv	186N 207E L.1	red chert
U	1	8i	198N 206E L.2	Tallahatta quartzite		46	9ww	surface	red chert
V	1	8j	196N 207E L.2	gray chert		47	9xx	surface	red chert
	2	8k	186N 206E L.1	Tallahatta quartzite		48	9yy	surface	red chert
W	1	9b	198N 209E L.5	pink chert		49	9zz	surface	red chert
X	1	9c	Feature 12	red chert		50	9aaa	surface	red chert
						51	9bbb	surface	red chert

Because there is presently no definite criteria that can be used to enable the sorting of natural red chert from heated chert of a red color, no attempt was made to do so during the analysis of the Kellogg materials. Thus in the tables below the cherts are classified according to color rather than geologic source and presence or absence of heat treatment. However, the authors feel that it can be safely assumed that the largest portion of the red chert has indeed been heat treated.

The ground, pecked and ground, and polished stone artifacts from Kellogg are generally consistent in form and raw material type to those found elsewhere in the area of the southeast in which the site is located. Therefore, such items as pitted anvil stones, grinding stones, pestals, atlatl weights, and celts were classified in the traditional manner and the material type was noted (see lithic tables below).

Projectile Points/Knives

Class A: Medium, corner notched, straight base (1 specimen). This straight based point exhibits an expanded stem and barbed shoulders produced by deep, narrow corner notching. The flaking is broad, shallow and random; the basal, stem, and blade edges are thinned. The base is also lightly ground. The point, made of mottled, pink chert, is biconvex in cross-section. Because it is broken vertically, the length, shoulder width, and basal width measurements cannot be determined. The maximum thickness is 9 mm.

This point appears to fit the Early Archaic Period Kirk corner notched cluster utilized by Faulkner and McCollough (1973), and Chapman (1977). The possibility exists, however, that this is a corner notched Woodland type such as the Jack's Reef Corner Notched (Cambron and Hulse 1964). Because this point was found on the surface no cultural affiliation can be confidently advanced.

Class B: Small, corner notched, serrated blade (1 specimen). This small point, made of red chert, exhibits a straight base and an

expanded stem that resulted from corner notching. The excurvate, serrated blade has been reworked into a small end scraper. The flaking is random and the base is thinned and lightly ground. The point is biconvex in cross section. Because the specimen is broken the shoulder and basal widths were not determined. The thickness is 6.5 mm. This point apparently belongs to the Kirk Corner Notched cluster as defined by Faulkner and McCollough (1973), and Chapman (1977). It was found in Feature 84, a Miller III pit that intruded through the entire Archaic zone.

Class C: Medium, triangular, side notched (1 specimen). This triangular shaped point has an excurvate base and narrow, shallow side notches placed about 5 mm from the base. The blade is excurvate and the distal end is acute. The flaking is collateral, the basal and blade edges are thinned, and the side notches are formed by the removal of several small flakes. The cross section is flattened. The point, made of weathered buff-colored quartzite, is 50.5 mm in length; the maximum blade width is 20.5 mm; the basal width is 24.5 mm and the maximum thickness is 6 mm.

This point was recovered in the lowest level of the Archaic zone. It resembles the Upper Valley Side Notched (Kneberg 1956), a Tennessee Valley type believed to date to "several centuries B.C." but it is also similar to the Damron (Cambron and Hulse 1964). Stratified sites such as the Standfield-Worley Bluff Shelter (DeJarnette, Kurjack and Cambron 1962) that produced examples of the Damron Point indicate a Middle and Late Archaic association. The Kellogg specimen certainly seems to have been associated with the Middle Archaic occupation, as indicated by the provenience and a radiocarbon date of 4860±121 B.C. obtained on a feature at approximately the same level (see radiocarbon dates discussion).

Class D: Medium, side notched, auriculate base, ground base and stem (1 specimen). The one broken specimen representing this class is beveled and heavily ground along the basal and stem edges. The base exhibits expanded-rounded auricles and the stem is expanded as a result

of broad side notching. The flaking is broad, shallow, and collateral and the side notches are formed by the removal of a few large flakes. The point, made of red-gray chert, is biconvex in cross section. Recovered from Level 5, it resembles the Buzzard Roost Creek point (Cambron and Hulse 1964). The Buzzard Roost Creek point is typologically and culturally related to the Benton point (DeJarnette, Kurjack and Cambron 1962; Cambron and Hulse 1964) which has been dated between 3600 and 2645 B.C. (Peterson 1973; Rafferty et al. 1979). Bentons found at the Eva Site (Lewis and Lewis 1959) occurred in the Big Sandy component, which is estimated to date from 2,000-500 B.C.

Class E: Medium, expanded stem, plano-convex cross section (4 specimens). The points included in this class usually have unfinished and excurvate bases. The expanded stem is produced by side notching; the shoulders are weak and tapered; the blade is excurvate; and the distal end is acute. The flaking is random or collateral and one example retains the cortex over half of one side. The stem and blade edges are thinned or occasionally beveled. The cross section is plano-convex. Three of four examples are made of red chert while the fourth is made of red-gray chert. The points range in length from 43.5 to 58 mm with a mean of 48.3 mm; the shoulder widths vary between 20 and 25 mm and average 22.2 mm. The minimum stem lengths range from 12 to 16 mm with a mean of 13.2 mm; the basal widths range from 11.5 to 20 mm and average 15.5 mm; thicknesses vary from 7 to 9 mm with a mean of 8.2 mm. Three of these points are surface finds and the fourth is from Feature 84, which has an apparent Early Miller III affiliation, but the point was probably intrusive.

Class F: Medium, narrow, side notched, excurvate blade (7 specimens). These points exhibit excurvate bases that may be unfinished and expanded stems produced by wide, shallow side notching. The shoulders are weakly tapered and the narrow blades are excurvate; the distal ends are acute. The flaking is random or collateral and most examples are crudely thinned along the basal, stem, and blade edges. The seven examples, all made of red chert, exhibit a biconvex cross

section. The lengths range from 39.5 to 52.5 mm with a mean of 44.5 mm and shoulder widths vary between 15 and 19.5 mm and average 17.5 mm. The minimum stem widths range from 13.5 to 15.5 mm with a mean of 14.3 mm; the basal widths vary from 15 to 19.5 mm and average 17.4 mm and the thicknesses range from 7 to 8.5 mm with a mean of 7.7 mm.

The points resemble the Swan Lake type (Cambron and Hulse 1964), a Transitional Archaic to Woodland point. Three of the artifacts were found on the surface, two were recovered from the first level, and one was found in Level 2. One was also recovered from Feature 84, a Miller III pit, but it was probably intrusive.

<u>Class G: Medium small, expanded stem; weak, tapered and expanded shoulders (2 specimens)</u>. The two crudely-made points in this class exhibit unfinished bases and expanded stems. The weak, tapered shoulders are expanded, the blades are straight, and the distal ends are acute. The flaking is random or horizontal-oblique and the stem and blade edges are thinned. The blade edges of one specimen are also alternately beveled. The cross section is biconvex and both points are made of red chert. The one unbroken specimen is 42.5 mm in length and the shoulder widths of both examples measure 18 mm. The two artifacts have minimum stem widths of 11.5 and 12 mm, basal widths of 12 and 13 mm, and a maximum thickness of 8.5 mm. One of the points was recovered from Feature 11 while the other was found in Feature 44. The ceramic assemblages present in these features indicate Late Miller II and Miller III contexts, but definite association of the points with these periods is uncertain.

<u>Class H: Medium small, side notched, expanded stem (5 specimens)</u>. The small, thick points representing this class exhibit excurvate bases and shallow side notches that result in expanded stems. The shoulders are weakly tapered, the blades are short, relatively broad and excurvate and the distal ends are acute. The flaking is random or collateral and the basal, stem and blade edges are thinned. The cross section is biconvex or plano convex; the points are made of red or red-gray chert. The length of the one complete specimen is 31 mm and

the shoulder widths of all examples vary between 16.5 and 17.5 mm. The minimum stem widths range from 15 to 16 mm, the basal widths vary from 18.5 to 19 mm and the maximum thicknesses range from 6 to 8 mm with a mean of 7.2 mm. Two of the examples were found on the surface, two were recovered in Level 1, and one was found in Feature 84, an Early Miller III pit.

Class I: Small, side notched, expanded stem (1 specimen). This extremely small point has a straight base and an expanded stem formed by wide, shallow side notching. The shoulders are weak and tapered, the blade is excurvate, and the distal end is acute. The flaking is collateral to random and all edges have been thinned. The cross section is biconvex and the point is made of gray chert. It is 18 mm in length, the shoulders are 13 mm in width, the basal width is 15 mm, and the thickness is 5 mm. The example is similar to the Washington type which is an arrow point found on Late Woodland sites (Cambron and Hulse 1964). It was recovered from Level I.

Class J: Medium large, expanded stem, tapered shoulders (2 specimens). Included in this class are medium-large points with straight bases and slightly expanded stems. The shoulders are weak, tapered and rounded and the blades are either straight or excurvate. The flaking is broad, shallow, and random, and the basal, stem, and blade edges are thinned. The base of one example is beveled and the other is ground. The points, one made of brown chert and the other of red-gray chert, exhibit a biconvex cross section.

One specimen was recovered from Feature 85, a Mississippian pit, and is probably intrusive. The other point, however, is from Level 4 of Block 2, which was in the Archaic zone.

Class K: Medium, expanded stem, broad blade (3 specimens). The three points included in this class have straight bases, expanded stems and incurvate stem edges. The shoulders are tapered, the blades are excurvate, and the distal ends are acute. The flaking is random or collateral; two examples retain part of the cortex. The basal, stem and blade edges are thinned utilizing fine pressure retouch. The

cross section is biconvex and all examples are made of red chert. The lengths range from 40 to 47 mm with a mean of 43.8 mm; shoulder widths vary from 29 to 29.5 mm; minimum stem widths range from 18 to 20 mm and average 19.3 mm; basal widths vary between 20 and 22 mm with a mean of 21 mm, and the thicknesses range from 8 to 10 mm with an average of 9.1 mm. These specimens resemble the McIntire Point, a Middle to Late Archaic type (Cambron and Hulse 1964). Two were found on the surface and one in Level 2.

Class L: Medium, narrow, serrated blade (3 specimens). The narrow, slightly expanded stem points included in this class exhibit excurvate and serrated blades and acute distal ends. The base may be excurvate, straight, or notched and the stem is either straight or expanded. The shoulders are horizontal or tapered and the cross section is biconvex. The flaking is random and the basal, stem, and blade edges are thinned. All examples are made of red or pink chert. The one complete specimen is 49.5 mm in length and the shoulder widths of all specimens vary from 19 to 22 mm with a mean of 20.8 mm; minimum stem lengths range from 12 to 14.5 mm and average 13.6 mm; basal widths vary between 13 and 15 mm and a mean of 14.3 mm; and thicknesses range from 7.5 to 8.5 mm and average 8.1 mm.

These points are similar to the Flint Creek point (Cambron and Hulse 1964), a Late Archaic-Early Woodland type. One of these points was recovered from Feature 88, a Miller III pit, and another was found in Feature 44, a Late Miller II pit.

Class M: Medium, rounded base, long stem, inversely tapered shoulders (2 specimens). Included in this class are points with rounded bases and long straight or slightly expanded stems. The shoulders are inversely tapered, the blades are straight and the distal ends are acute. The basal, stem and blade edges are thinned and the base of the barbed shoulders are formed by the removal of several small flakes. The points, made of mottled pink chert, exhibit a biconvex cross section.

The length of the one unbroken specimen is 39 mm and the shoulder width is 28 mm. The basal widths of the two points are 16 and 18 mm and thicknesses range from 8.5 to 10 mm. The two points came from Levels 2 and 3 of the same square. They do not closely resemble any previously defined type.

Class N: Medium, short broad stem, horizontal shoulders (2 specimens). The points in this class exhibit straight or slightly incurvate bases, straight stems, horizontal shoulders and excurvate blades. The flaking is broad, shallow and random and the basal, stem, and blade edges are thinned. The cross section is biconvex. The points are made of a variety of materials including red, red-gray mottled, and pink fossiliferous cherts. Because all examples are broken, the length measurements are undetermined. The shoulder widths range from 30 to 38.5 mm with a mean of 33.5 mm; basal widths of all examples are 21 mm; stem lengths vary between 8 and 10 mm with a mean of 9 mm; and thicknesses range from 8 to 9 mm with an average of 8.3 mm. One of the specimens was recovered in Feature 5, a Mississippian pit, one was found in Level 2 of Block 2, and the third was found on the surface near Feature 44, a Late Miller II pit. The specimen found in Feature 5 was probably intrusive.

Class O: Medium, straight stem, unfinished base (2 specimens). These two crudely made points exhibit excurvate and unfinished bases and straight stems. The shoulders are horizontal or inversely tapered and the blade is excurvate-incurvate. The poorly executed flaking is broad, shallow, and random, and some thinning is exhibited along the basal, stem, and blade edges. The shoulders were formed by the removal of a few large flakes at the juncture of the stem and the blade. One example shows heavy wear along the blade edges indicating that it might have been a cutting implement. The cross section is biconvex and the points were made of red and gray cherts. Both specimens were broken and the lengths are undetermined. The shoulder widths range from 27 to 32 mm; basal widths vary from 18 to 19 mm; and the thicknesses of both examples are 9 mm. Because both artifacts were found

on the surface and do not resemble any defined type no cultural affiliation is advanced.

Class Q: Medium, broad contracting stem, unfinished base, straight blade (1 specimen). This point, which is made of mottled gray chert, has a straight, unfinished base and a broad, contracting stem. The shoulders are horizontal, the blade is straight, and the distal end is acute. The flaking is random. The blade edges are thinned and the cross section is biconvex. The example is 47 mm in length, 33.5 mm in width at the shoulders, and the stem is 12 mm in length; the maximun thickness is 9 mm. This point, recovered from the surface, resembles the Elora (Cambron and Hulse 1964). Based on excavations at Stanfield-Worley Bluff Shelter (DeJarnette, Kurjack and Cambron 1962) and the Flint Creek Rock Shelter (Cambron and Waters 1961) a late Archaic or Early Woodland association is indicated.

Class R: Medium, narrow contracting stem, unfinished base (1 specimen). This medium sized point has an unfinished base and a short contracting stem. The shoulders, formed by the removal of a few large flakes, are broad and horizontal and the blade is excurvate. The poorly executed random flaking is often shallow and occasionally deep, and the blade edges are thinned. The cross section is biconvex. The point is made of pink chert and the base retains some of the cortex. Because it is broken the length is unknown; however, the shoulder width is 33 mm, the basal width is 15 mm, and the maximum thickness is 10 mm. The artifact was recovered from Feature 84, an Early Miller III pit.

Class S: Large, strong tapered shoulders, contracting stem (1 specimen). This large point has a straight base with diagonally modified corners. The contracting stem has straight edges and the shoulders are strong and tapered; the blade is excurvate. The flaking of this Tallahatta Quartzite point appears to be broad and random. The base and stem are thinned and the blade edges are serrated. The cross section is plano-convex. Because the point is broken, the length and shoulder widths were not ascertained. The stem, however, is 11.5

mm in length and 20 mm in width and the maximum thickness is 14.5 mm. This specimen was recovered from the surface and does not resemble any defined type.

Class T: Medium, broad blade, contracting stem, pointed base (2 specimens). These two points, made of red chert, have a pointed base and a contracting stem. The shoulders are broad and may be either horizontal or tapered; the blade is excurvate and the distal end is broad. The crudely executed flaking is random and the blade edges are thinned. The cross section is biconvex. The one unbroken example is 45 mm in length. The shoulder widths vary from 26 to 33 mm, stem lengths range from 8 to 10 mm, and the maximum thicknesses range from 9 to 12 mm. One of the points was recovered from Level 5 of Block 1 and the other was a surface find. They are similar to some Gary point specimens, a Late Archaic and Woodland point (Cambron and Hulse 1964).

Class U: Medium, weak tapered shoulders, contracting stem (1 specimen). This point, made of Tallahatta Quartzite, has a rounded base and a contracting stem. The shoulders are weak and tapered and the blade is straight. The flaking technique cannot be determined, but the basal, stem and blade edges are thinned. The cross section is biconvex. The length of this broken point is indeterminable. The shoulder width is 25 mm, the maximum stem width is 15.5 mm, and the maximum thickness is 11 mm. This point, recovered from Level 2 of Block 1 is also similar to some specimens of the Gary type, a late Archaic and Woodland point (Cambron and Hulse 1964).

Class V: Medium, contracting stem, weak tapered shoulders, straight blade (2 specimens). Included in this class are those points with unfinished bases, contracting stems, weak tapered shoulders and straight blades. The crude flaking is collateral and results in a median ridged cross section. One of the specimens is made of Tallahatta Quartzite and the other is made of a poor quality gray chert. Both examples are broken so the length measurements are indeterminable. The one point with unbroken shoulders measures 25 mm in width. The

stem lengths vary from 9 to 12 mm and the maximum thicknesses range from 10 to 12.5 mm. These points, recovered from Levels 1 and 2, do not resemble any previously defined type.

Class W: Small, thick pentagonal (1 specimen). This is a small point with a straight base. The blade is straight and the distal end is acute. The crudely executed collateral flaking results in a median ridged cross section. The point, made of pink chert, is 29.5 mm in length, 16.5 mm in width, and 9.5 mm in thickness. Numerous step fractures along the basal edge and hinge fractures on the face of the blade suggest that it is a Mississippian Pentagonal (DeJarnette, Kurjack, and Cambron 1962).

Class X: Small, thin, pentagonal (1 specimen). All sides of this small, thin, pentagonal point are straight. The contracted hafting area extends from the base to the widest portion of the point. The blade is straight and the distal end is acute. All edges are thinned and the cross section is flattened. The point is made of red chert and is 17.5 mm in length, 12.5 mm in width, and 2.5 mm in thickness. It is similar to the Mississippian Pentagonal which is believed to precede the Madison point (DeJarnette, Kurjack and Cambron 1962). It was found in Feature 12, a pit whose cultural affiliation was undetermined.

Class Y: Small, thin, triangular (51 specimens). This class includes small, thin, stemless triangular points. Within this group, however, there is much variation. The base and blade may be excurvate, straight, or incurvate, but the distal end is always acute. The flaking is random or collateral, resulting in a cross section that is flattened, biconvex, plano-convex, or median ridged. On most examples the base and blade are thinned by fine pressure retouch. The points are often red in color and are probably heat treated. Others are made from pink, yellow, and brown cherts. The lengths range from 13 to 25 mm with a mean of 20.6 mm; the widths vary between 11 and 17.5 mm and average 14.1 mm; and maximum thicknesses range from 2.5 to 6.5 mm with a mean of 4.1 mm. Thirty points were recovered from Level 1 and six were found in Level 2. Four points were recovered from pit features associated with the Mississippian period, and five points were included as a burial offering

in a Mississippian grave (Burial 7).

Although a few specimens vaguely resemble the Hamilton Point, all are considered to be Madisons, which have Late Woodland and Mississippian associations (Nielsen and Jenkins 1973:53; Blakeman, Atkinson and Berry 1976:42-43; Cambron and Hulse 1964).

Flaked Tools Other Than Projectile Points/Knives

Biface Adzes/Scrapers (20 specimens; Plate 10). These rectangular or trapezoidal shaped artifacts are bifacially flaked on at least one end. While many exhibit four bifacial edges, some have a combination of bifacial, unifacial, and unworked edges. Several examples have one or more beveled edges that appear to result from unifacial resharpening. The tools, usually made of yellow-tan river gravel, generally retain some of the cortex. Edges often display light step fracturing because of the poor conchoidal properties of the chert. Several specimens also exhibit battering and extreme step fracturing that appears to be the result of heavy use. A few of the tools appear to have notches or indentations near the middle of the side edges that may indicate hafting. The length of these tools range from 39 to 69 mm; widths vary between 27 and 40 mm; and maximum thicknesses range from 9 to 22 mm. The cross section may be biconvex, median ridged, or plano-convex. Because of the form of the tools and heavy wear patterns many appear to be adzes or choppers. Others exhibit little or no wear and therefore may be unused adzes or scrapers.

Uniface Adze (3 specimens; Plate 10). These trapezoidal or oval shaped tools are worked on at least three edges to produce a chopping edge. All examples are battered and exhibit severe step fracturing that appears to have resulted from heavy use. Made from red or yellow gravel these artifacts range from 46 to 70 mm in length, 35 to 44 mm in width, and have a maximum thickness of 13 to 20 mm.

Large Oval Biface Scraper (1 specimen). The single artifact in this class is a large, oval biface manufactured by removing large, deep flakes along the entire circumference of both faces. It

is made of argillite or "clay stone," a soft type of stone that originates in the Tallahatta formation. Heavy wear noted on one long edge indicates that it is probably a scraping tool. It is 75 mm in length, 59 mm in width, and 36 mm thick. The cross section is median ridged.

Medium Oval Biface Scrapers (8 specimens; Plate 12). These medium-sized, oval-shaped tools are usually bifacially worked along the entire circumference. Some artifacts, however, are unifacially flaked on one or both of the long edges. They are made of red or yellow gravel and most retain some of the cortex on one or both faces. Because of the poor flaking characteristics of the chert the tools are crudely made and exhibit step fractures on the edges and face. The lengths range from 39 to 50 mm; maximum widths vary between 24.5 and 37 mm; and maximum thicknesses range from 12 to 20 mm. The cross section is either plano-convex or biconvex. These tools exhibit little or no observable wear on the scraping edges.

Small Oval Biface Scrapers (4 specimens; Plate 12). These small, oval implements differ from the two preceding types in size only. The tools are bifacially worked along the entire circumference, often retain some of the cortex, and are made of red or yellow chert. Lengths range from 30 to 38 mm; maximum widths vary between 24 and 25 mm; and maximum thicknesses range from 8 to 12 mm.

Elongate Biface Cutting Tools (10 specimens; Plate 13). These artifacts are long and generally oval in shape and are bifacially worked on at least two edges. Some specimens may also be unifacially worked on one or two other edges. All examples are made of red or yellow river chert and most retain some of the cortex. Step fractures are often noted on one or more edges. They range in length from 44 to 67 mm; width varies from 22 to 31.5 mm; and maximum thickness ranges from 14 to 21 mm. The cross section is biconvex, plano-convex or median ridged. Many examples exhibit wear on the long edges indicating use as cutting tools.

Stemmed Biface Cutting Tool (1 specimen; Plate 13). This bifa-

cially worked artifact has one weak and tapered shoulder and the opposite side is notched. The stem is contracted and the base is rounded. Made of red chert, the artifact is 42 mm in length, 25 mm in width, and 10 mm thick. The cross section is plano-convex. It appears to be a cutting implement, for one long edge has been finely pressure flaked.

Biface Shaft Drills (5 specimens; Plate 11). These bifaces are long, narrow, collaterally flaked, and median ridged tools commonly referred to as shaft drills. Most examples display extensive wear on the sides and ends. The drills are made of a variety of materials including yellow, gray and red cherts as well as Tallahatta quartzite. The lengths range from 21 to 36 mm; widths vary between 8 and 10 mm; and the maximum thicknesses range from 5.5 to 8.5 mm.

Expanded Base Biface Drills (2 specimens; Plate 11). These drills differ from the preceding ones in that they exhibit expanded bases and long, narrow, tapered shafts. The flaking is collateral, the cross section is median ridged and the edges are thinned or alternately beveled. These drills are made of red or pink chert.

Lanceolate Drill (2 specimens; Plate 11). These two Lanceolate bifaces exhibit straight or unfinished bases, rudimentary contracting stems and acute distal ends. The flaking is collateral and some retouch occurs along the basal and blade edges. The artifacts, made of gray and brown cherts, range in length from 35 to 43 mm; width varies from 13 to 17 mm; and maximum thickness ranges from 7.5 mm to 9 mm.

Notched Pebbles (2 specimens; Plate 13). These artifacts are unifacially or bifacially notched and exhibit wear on the notched edge. Made of red or yellow chert, they range in length from 49.5 to 65 mm; width varies between 22.5 and 41.5 mm; and maximum thickness ranges from 14 to 28 mm.

Denticulates (2 specimens; Plate 13). These artifacts are pebbles that have been percussion flaked to produce one jagged or denticulated edge. Both examples recovered are made of yellow chert.

Lengths vary from 49 to 61 mm; widths range from 33 to 36 mm; and maximum thicknesses vary from 21 to 23 mm. These tools were probably used for ripping/cutting.

Distal End Fragments (39 specimens). These broken artifacts are differentiated distal ends of bifaces. They appear to be distal ends of projectile points or cutting tools.

Biface Modified Pebbles: Class 1 (8 specimens; Plate 14). These artifacts are moderately long, oval, red or yellow pebbles with a cutting, scraping or chopping edge produced by striking a few large flakes from each face of one long edge.

Biface Modified Pebbles: Class 2 (22 specimens; Plate 14). This catch-all category includes bifacially modified pebbles with edges that are formed by striking a few flakes from each face to produce a chopping, scraping or cutting edge. The artifacts are made of red or yellow river gravel and occur in a variety of shapes and sizes.

Uniface Modified Pebbles (14 specimens; Plate 14). This is a catch-all category for pebbles that have a few flakes removed from one face to produce a cutting, chopping, or scraping edge.

Biface Preforms: Class 1 (3 specimens; Plate 15). These long, thick, oval artifacts are bifacially worked by removing several large deep flakes from each long edge. Much of the cortex, however, is retained. Made of red or yellow river gravel, these bifaces exhibit a plano-convex, biconvex, or median ridged cross section. Lengths range from 63 to 76 mm; widths vary from 34 to 44 mm; and the maximum thicknesses range from 16 to 22.5 mm. Because of the crudeness of the workmanship and the lack of retouch or wear patterns, these artifacts appear to be preforms in the initial reduction stage.

Biface Preforms: Class 2 (5 specimens; Plate 15). Included in this class are crude, bifacially worked artifacts that are long and narrow and have a pronounced distal end. The percussion flaking is broad and shallow and often some of the cortex is retained. The artifacts, made of red chert, do not display any retouch or edge wear.

They range in length from 57 to 79 mm; widths vary between 23 and 34.5 mm and maximum thicknesses range from 13 to 24 mm. Because of the form and lack of retouch or edge wear, these bifaces appear to be preforms in the second reduction stage.

Biface Preforms: Class 3 (2 specimens; Plate 15). This class includes thick bifaces that exhibit straight bases and excurvate blades. All examples are thinned but display no edge wear. Chert colors include red, pink and yellow. The single unbroken specimen in this class is 56 mm long; the widths of all examples vary from 23.5 to 38 mm; and maximum thicknesses vary between 15 and 16 mm. They appear to be preforms in the third stage of reduction.

Biface Preforms: Class 4 (7 specimens; Plate 15). These thin bifaces are relatively long and narrow. The flaking is random or collateral and all of the edges are thinned. Made of red chert, they exhibit a biconvex cross section. All of the examples are broken and the total length cannot be determined. Widths range from 24 to 27.5 mm and maximum thicknesses vary between 8 and 10.5 mm. Because of the form and lack of edge wear these appear to be preforms in the next to last reduction stage but use as cutting tools is also possible.

Triangular Biface Preforms (9 specimens; Plate 15). Included in this class are small, triangular bifaces that are crudely flaked and exhibit little retouch. Made of red or yellow chert, they range in length from 25 to 38 mm, while the maximum thicknesses vary between 7 and 11 mm. The cross section is biconvex or median ridged. They appear to be preforms in the next to last reduction stage in the manufacture of triangular arrow points.

Uniface Preforms (7 specimens; Plate 16). Included in this class are long yellow chert pebbles which have been modified by removing several large irregular flakes from one face. The flaking does not form usable edges and more than half of the cortex remains on the worked face. Five out of six lithic items comprising Feature 57 were this type. They appear to be preforms in the initial reduction stage

manufacture of projectile points/knives or other tools.

Biface Fragments: Class 1 (121 specimens). This is a catch-all class for broken, crudely flaked, biface fragments that exhibit no edge wear. All artifacts in this category are made of red or yellow chert.

Biface Fragments: Class 2 (12 specimens). These artifacts differ from the preceding Class 1 biface fragments in the technique of flaking utilized. While the Class 1 biface fragments exhibit primary flaking only, these artifacts also exhibit retouch.

Gravers (2 specimens; Plate 11). These flake tools are unifacially worked by pressure flaking to produce a short, narrow projection. Made of red chert, they range in length from 12 to 25 mm; widths vary from 13 to 27.5 mm; and maximum thickness ranges from 3.5 to 6 mm.

Perforator (1 specimen; Plate 11). This tool, produced from a flake, is unifacially worked on alternate faces to produce a long, narrow projection. The tool is made of red chert and is 9.5 mm in length, 10 mm in width, and has a maximum thickness of 3.5 mm. Both edges and the distal end exhibit wear.

Notched Flakes (7 specimens; Plate 11). These flake tools are unifacially worked to produce a notch on one edge. The notches of all specimens exhibit wear. Made of red chert, they range in length from 17 to 30 mm; widths vary from 11.5 to 17 mm; and maximum thicknesses range between 3 and 10 mm.

Retouched Flakes (41 specimens). These are flakes that are finely retouched to produce a cutting or scraping edge.

Utilized Flakes (48 specimens). These un-retouched flakes display edge wear that is the direct result of utilization.

Flake Knives (1 specimen; Plate 11). Included in this class are un-retouched flakes that appear to have been struck from a core for use as cutting implements. The specimen (Plate 11F), made of white chert, is a true lamellar blade.

Decortication Flakes. These are flakes removed from a stone in the initial reduction process. The dorsal surfaces display original cortex of the parent stone.

Flakes. These are that lithic debitage with or without a striking platform that is the by-product of percussion or pressure flaking during the manufacture of tools.

Biface Thinning Flakes. These usually small flakes exhibit a portion of the edge of a flaked artifact on the end from which the removal pressure was applied. They are a result of the thinning or retouching of a biface tool by pressure flaking.

Shatter. These are amorphous lithic fragments that appear to be a by-product of tool manufacture.

Cores. These biface artifacts exhibit long, deep flake scars. They appear to have resulted from striking off flakes to use as tools.

Hammerstones (5 specimens). These chert or fine-grained quartzite cobbles exhibit step fractures or battering pits suggestive of use as striking implements, probably in percussion flaking of other lithic materials.

Other Lithic Artifacts

Bannerstone Fragments (3 specimens; Plate 17; Figure 11). The three specimens of this artifact type are pieces of ground and polished shaped objects that are generally believed to have been atlatl weights. Two fragments from separate specimens (Plate 17), found in Level 4 of Block 1, may originally have been shaped as illustrated in Figure 11, but the pieces are too small to determine a definite shape. One specimen (Plate 17h) is made of light brown siltstone and the other (Plate 17g) is made of limonite. Drilled holes penetrate the long axis of each. The third specimen (Plate 17i) was found with Burial 19, an Archaic cremation, and is shattered into numerous small pieces as a result of thermal explosion. A reconstructable portion of one end indicates that it also probably was shaped as illustrated in Figure 11. Made of dark brown siltstone, this bannerstone has a drilled hole

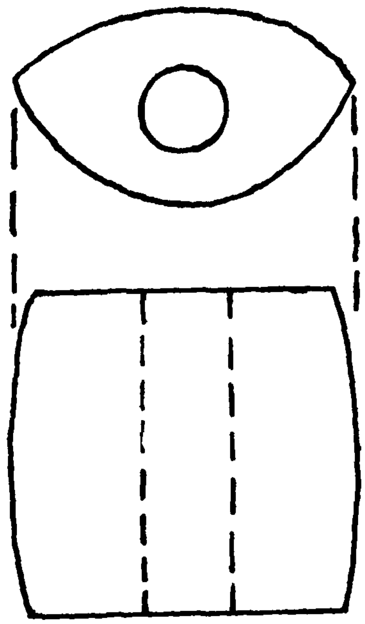


Figure 11. Apparent form and approximate size of fragmented bannerstones

16 mm in diameter through the long axis.

Siltstone Gorget (1 specimen; Plate 18). This ground and polished artifact is made of a shaly siltstone that probably came from northern Alabama. The square, drilled gorget measures 72 x 73 x 11 mm and is gray in color. Also recovered from the Archaic cermation (Burial 19), the artifact displays heat spalling.

Greenstone Celts (6 specimens; Plate 17). These ground and polished artifacts display sharp edges on one end and are made of chlorite schist, or "greenstone," which may have come from deposits in northern Alabama (Jones 1939:20). Two were found in association with Burial 7, one was excavated from Level 1 of Square 186N206E, and three fragments were recovered from the surface.

Ferruginous Sandstone Palette (1 specimen; Plate 18). Found on the chest of Burial 23, this assymetrical tablet is ground and polished on both faces. It is 106 mm in length, 95 mm in width at one end, 63 mm in width at the other end, and is 8 mm thick.

Mortors (2 specimens; Plate 19). These sandstone artifacts display large, shallow concavities formed by the grinding of vegetal matter with a hand held stone. The weight of the objects range from 500 g to 8 kg.

Pestles (2 specimens; Plate 19). These ferruginous sandstone objects are conical in shape on one end and have a well-worn and flattened opposite end. Lengths range from 77 to 83 mm and the basal diameters vary from 67.5 to 69.5 mm. The artifacts were probably used in conjunction with a mortor in grinding vegetal matter.

Pitted Anvil Stones (4 specimens). These ground sandstone artifacts display single small round pits, or concavities, on one or both faces. The diameters of these pits range from 25 to 33 mm and depths vary between 2 and 8 mm. The shape of the pit indicates usage as a nut cracking implement. Some specimens are also ground on the edges and faces and may have been used with mortors for preparing vegetal matter.

Abraiders (5 specimens). These amorphous shaped artifacts exhibit one or more long, narrow, deep grooves. The depths of the grooves range from 2 to 6 mm and the lengths vary with the size of the stone. They appear to have been used for sharpening or shaping wood, bone, or stone.

Ground Sandstone Fragments. Included in this catch-all category are those ground sandstone fragments whose function cannot be determined. Most, however, are probably pieces of plant processing implements.

Quartzite Fragments. This is a catch-all category for unidentifiable fragments of ground quartzite.

Limonite and Hematite Fragments. These are unidentifiable ground and unground fragments of limonite and hematite.

Fire-cracked Rock. These items consist of reddish or reddish-purple pebble fragments, often fire spalled, that have been exposed to extreme heat.

Sandstone Fragments. These are simply amorphous, unworked fragments of sandstone.

Summary and Conclusion

The lithics recovered at Kellogg Village reveal that the site might possibly have been occupied during the Early Archaic period, but if so not intensively. A few Early Archaic points resembling the Kirk Corner Notched morphology were found but all were out of context. One possible Kirk point was found on the surface and the second was in the fill of a Woodland feature. The first definite *in situ* Archaic occupation of the site is indicated by the Class C corner notched point found in the lowest levels of the Archaic occupation zone (Zone 2) where Middle Archaic features occurred. This point, which closely resembles the Middle to Late Archaic type known as the Upper Valley Side Notched (Kneberg 1956) and the Damron (Cambron and Hulse 1964), was found in Level 11 near an Archaic cremation possessing ground and polished lithic artifacts and a small pit which yielded a radiocarbon date

of 4680±121 (calibrated). Middle and Late Archaic points such as the Class D (Buzzard Roost Creek), Class K (McIntire), Class L (Flint Creek), Class J and Q (Elora), and Class T (Gary) types (Cambron and Hulse 1964) indicate subsequent use of the site during the remainder of the Archaic period.

Although no lithic artifacts were found in contexts at Kellogg that will allow definite assignment to the Gulf Formational and Early Woodland periods, some of the Late Archaic types mentioned above are believed to have continued in use during these periods. Points from the surface or upper levels of the site that could have been manufactured during the Gulf Formational and Early Woodland periods include the Class E, Class F (Swan Lake), Class H, Class L (Flint Creek), Class M, Class O, Class Q (Elora), Class S, Class T (Gary), Class U (Gary), and Class V types.

For the Middle Woodland period, in particular Miller II, several features produced possible culturally related points. Feature 44, interpreted to be a Late Miller II pit, possessed an example of the Class G type. Feature 44 also yielded a Class L (Gary) type. Feature 84 produced six stemmed points, but some or all may be intrusions. This large and deep pit contained a mixture of ceramic materials from several components but the presence of Mulberry Creek Cordmarked sherds and the complete absence of the diagnostic Miller III triangular points (Class Y) indicates an Early Miller III affiliation. The stemmed points from this feature include the Class B, E, F, and H types.

The Late Woodland (Miller III) and Mississippian periods triangular point (Class Y; Madison) was the most common type found on the site. Thirty-six points were found in Levels 1 and 2, four were found in Mississippian pits, and five were found with a Mississippian burial. None were found in Miller III features, an unusual circumstance on central Tombigbee River sites.

The Kellogg lithic analysis has produced limited supportive data for the hypothesis presented by Ensor (1978) in regard to changes in lithic raw material utilization through time. His study was primarily concerned with the contrasting treatments of local chert during the

various cultural periods. Ensor's postulates in regard to adaptation to the local cherts of the area will be addressed below and compared to the lithic data from the Kellogg site.

Postulate 1: During the Archaic period, local, thermally unaltered chert cobbles were used in the manufacture of unspecialized tools and exotic stone or heat treated local cobbles were used for specialized tools. Approximately 5% of Archaic debitage from local cherts has been heat treated.

Discussion of Postulate 1: The evidence from Kellogg is inconclusive in regard to heat treatment versus non-alteration of chert materials but on the basis of red and yellow-tan chert artifacts and debitage counts, the postulate is contradicted. As shown on Tables 4 and 5, the Archaic levels (generally 4-13) produced almost equal quantities of red and yellow-tan chert. This evidence is considered inconclusive, however, because of the extensive disturbance of the Archaic zone through post-Archaic period aboriginal digging, which could easily have resulted in the re-deposit of Woodland lithic materials in the lower levels.

The lithics recovered from Archaic features were so few in quantity that little validity can be placed on the data. As shown on Table 2, seven red chert and four yellow-tan chert items were recovered from the 14 identified Archaic features. Burial 19, also included in this tabulation, produced seven such items and four of these were of red chert. However, since this burial was a cremation, the four red chert items, all of which were flakes, might have been accidentally thermally altered by the cremation fire.

Ensor's contention that most of the specialized tool forms manufactured during the Archaic period were made from either exotic or thermally altered local stone finds support in the Kellogg data. As shown on Table 4, no specialized tools made from unaltered yellow-tan chert were recovered from the Archaic levels at Kellogg but three specialized tools of red chert, assumed to be heat treated, were found in Levels 4 and 5. Additionally, five specialized tools made from apparent exotic stone were found in the Archaic deposit. The latter

Table 4. Summary of Flaked Lithic Artifacts by Color and Material Type: All Unit Levels Combined

Type/color	Levels											
	1	2	3	4	5	6	7	8	9	10	11	Total
Red Chert												
Specialized tools*	32	8	1	2	1							44
Other+	157	43	28	13	7	5	2		2	6		263
Total	189	51	29	15	8	5	2		2	6		307
Yellow Chert												
Specialized tools	3											3
Other	20	10	11	12	6	5	2	3	3	2		74
Total	23	10	11	12	6	5	2	3	3	2		77
Gray Chert												
Specialized tools	1	2			1							4
Other	5	1	1	2		2	1					12
Total	6	3	1	2	1	2	1					16
Red/Gray Chert												
Specialized tools					1							1
Other												0
Total					1							1
Tallahatta Quartzite												
Specialized tools	1	1										2
Other	1			1						1		3
Total	2	1		1						1		5
White Chert												
Specialized tools												0
Other	2								1			3
Total	2								1			3
Pink Chert												
Specialized tools	3	2			1							6
Other												0
Total	3	2			1							6
Mottled Pink Chert												
Specialized tools		1	1									2
Other												0
Total		1	1									2
Brown Chert												
Specialized tools				1								1
Other												0
Total				1								1
Unid. Quartzite												
Specialized tools											1	1
Other												
Total											1	1

* Projectile points/knives, drills, gravers, perforators

\+ Cutting/scraping/chopping tools, biface fragments, cores, utilized flakes and fire cracked rocks, retouched flakes, modified pebbles, preforms, denticulated bifaces, notched flakes

Table 5. Summary of All Flaked Lithic Material by Color and Material Type from Column Sample Squares: 197N207E and 187N209E

Type/color	Levels 1	2	3	4	5	6	7	8	9	10	11	12	13	Totals
Red Chert														
Tools	17	5		1					1					24
Decortification flakes	72	21	5	2	1	3	5	1	2	3	1			115
Biface thinning flakes	6				1									7
Flakes	255	114	25	22	5	8	14	5	4	5	3		1	461
Shatter	11	16	2			2	4							35
Utilized flakes		2												2
Total Red Chert	362	158	32	25	7	13	23	6	7	8	4	0	1	644
Yellow Chert														
Tools	4		1	3	1				1	2				12
Decortification flakes	11	6	11	11	2	1	1	3	2	7				55
Biface thinning flakes	2	3												5
Flakes	36	13	22	23	4	2		2	5	12				119
Shatter	3	1		4	1		1	2						12
Utilized flakes														0
Total Yellow Chert	56	23	34	41	8	3	2	7	8	21				203
Pink Chert														
Tools	1													1
Gray Chert														
Flakes		1	2	2			2							7
Shatter			2											2
Total Gray Chert		1	4	2			2							9
White Chert														
Flakes							1		1					2
Red/gray Chert														
Tools					1									1
Tallahatta Quartzite														
Flakes	1	2	4	1		1					1			10
Shatter		1	1											2
Total Tallahatta	1	3	5	1	0	1	0	0	0	0	1	0	0	12

includes tools made from gray, red/gray, pink, and brown chert and one unidentified quartzitic stone.

Postulate 2: Beginning in the Miller I period and continuing into the Mississippian period, heat treatment of entire local cobbles prior to flaking was an integral and basic part of the adaptation to local chert materials; by the end of Miller II, 95% of the debitage is heated (Ensor 1978).

Discussion of Postulate 2: Although the Middle Woodland through Mississippian materials in the general midden at Kellogg were mixed, it may be safely assumed that materials from these periods of occupation would have occurred primarily in Levels 1 and 2. In reference to the tabulations on Table 4 , calculations show that 38% of the red and yellow-tan chert material recovered from Level 4 (Late Archaic) of the two samples squares is red and 66% is yellow-tan. In Level 3, 48% is red and 52% is yellow-tan. In Level 2, 92% is red and 8% is yellow-tan and in Level 1, 87% is red and 13% is yellow-tan. Although the higher percentage of red chert (92%) is slightly lower than Ensor's findings of 95%, the difference is of little significance. The predominance of red over yellow-tan chert is still quite marked and tends to confirm Ensor's assertion that heat treatment was extensively practiced during the Middle Woodland, Late Woodland, and Mississippian periods.

Lithic data from post-Archaic features identified to cultural affiliation also indicates extensive heat treatment during the Woodland and Mississippian periods. As shown on Table 2 , the five Late Gulf Formational features produced a total of only 10 lithic items, nine of which were red chert and only one of which was yellow-tan chert. Little credibility can be placed on such a small sample for that cultural period but the lithics from the Miller II features show quite well that heat treatment was indeed pronounced by that time. The three Miller II features produced 54 lithic items, 92% of which were red chert and only 8% of which were yellow-tan chert. A similar ratio is indicated by the 13 Miller III features, from which 1859 red and yellow-tan chert lithic items were recovered. Of this total, 87% is red chert and 13% is yellow-tan. The Mississippian

features yielded a total of 590 red and yellow-tan chert items, 80% of which were red and 20% of which were yellow-tan.

Ceramics

A total of 4711 sherds and seven whole or partial vessels were analyzed. Of the sherds, 1480 were recovered from feature fills, 3231 were recovered from the general midden levels in the excavation units, and four were in direct association with burials. Sherds out of context found in burial pit fills and on the surface were excluded from the analysis; although not analyzed, these sherds were saved and are on deposit at Mississippi State University but no value was seen in reporting them here. However, the few rare or unusual sherds that appeared in the burial fill assemblages or were found on the surface, are included in the discussions below. Sherds that could be fitted together to form substantial portions of vessels are not included in the total count or in Table 7, but are presented, along with whole vessels, in Table 8. With the exception of sherds from six squares chosen for recovery technique comparison (see below), the sherds from features and the remaining squares small enough to pass through a 1/2 inch mesh screen were not analyzed individually; total weights of the small sherds are presented in Tables 6 and 7 with the ceramic tabulations for each provenience.

Most of the ceramics from the general excavations were confined to the upper 20-30 cm, which had been subjected to a great amount of aboriginal digging and modern cultivation. Thus, no significant stratification existed.

The majority of the sherds were easily sorted into previously defined types; sherds that could not be readily accomodated by the existing typologies are briefly described. For the ceramics of the Mississippian period, the type variety system outlined by Steponaitis (1978) was utilized. Reference is also made to Jenkins' (1979) recently completed type-variety system for Gulf Formational and Woodland period types, but because his work was not available during

TABLE 6. CERAMICS FROM EXCAVATION UNITS

Ceramic Types	186N 206E		186N 207E		186N208E					186N 209E	187N 206E	187N 207E		187N 208E	187N 209E		196N206E			196N207E				196N208E				
Square and Level	1	2	1	2	1	2	3	4	5	1	1	1	2	1	1	2	1	2	3	1	2	4	5	1	2	3	4	5
FIBER TEMPER																												
Wheeler Plain					1					2					1		3	1		1	6			3	9			
Wheeler Dentate Stamped																						1						
SAND TEMPER																												
Alexander Incised	3	3	2							1	2				2		3	2		5	1				1			
Alexander Pinched		1	1		4						11							1										
Columbus Punctated			1								1										2							
Smithsonia Zone Stamped (Podal Supports)																												
Baldwin Plain	12	1	21		31					41	24	30		24	35		17	4	1	26	4		2	33	4			
Furrs Cordmarked			2		2					6		5		3			2	1	1	8				5	1			
Saltillo Fabric Impressed																												
Basin Bayou Incised					1																			2				
Santa Rosa Stamped														1														
McLeod Check Stamped																												
McVay Brushed			1																									
Incised										1																		
Zone Incised																				1								
Eroded															2													
Vessel Base																												
Incised & Punctated																												
GROG TEMPER																												
Baytown Plain	5	1	26		19					29	22	14	2	13	25		20	4		10	1			12				
Mulberry Creek Cordmarked	18		22	3	15					19	21	9		18	17		6	2		13				13				
Withers Fabric Marked															2									2				
Marksville Incised																				1								
Marksville Stamped																												
Eroded				1																					9			
Unidentified Incised			1																									
SHELL TEMPER																												
Mississippi Plain, var. Warrior	8		12		22	1			1	19	12	10		14	27		7		2	8				7				
Moundville Incised, var. Carrolton			1		2																							
Possible Cordmarked																												
Unidentified										1																		
Vertical Nodes																								1				
Nodes																												
Incised & Punctated																												
Loop handle fragment			1												1													
BONE TEMPER																												
Turkey Paw Plain	1		4		5						1	2		2	1		1			2				2				
Turkey Paw Cordmarked					2																							
Eroded			2																									
BONE & GROG TEMPER																												
Plain																												
PETRIFIED WOOD TEMPER																												
Plain																	1							2				
TOTAL	47	6	97	4	104	1	0	0	1	119	94	70	2	75	113	0	60	15	4	74	14	1	2	82	24	0	0	0
SHERDLET WEIGHT (in grams)	75	4	265	4	324	3	1	71	--	282	35	29	2	213	285	8	162	28	4	273	12	--	--	228	22	1	3	1
FIRED CLAY WEIGHT (in grams)	17	48	77	--	56	40	20	--	22	104	90	36	12	103	63	--	15	27	--	8	52	85	14	13	89	152	118	28

TABLE 6. Continued

Ceramic Types	Square and Level																												
	196N209E							187N206E			197N207E				197N208E				197N209E				198N 206E		198N207E				
	1	2	3	4	5	6	8	1	2	3	1	2	3	4	1	2	3	4	1	2	3	9	1	2	1	2	3	5	10
FIBER TEMPER																													
Wheeler Plain	2	1	1	1	1				2			3			3	2	1			1			4		1	2	1	1	
Wheeler Dentate Stamped															1					1									
SAND TEMPER																													
Alexander Incised	1	6	2						5	2		4			3	3							3	2	2		4		
Alexander Pinched																				1									
Columbus Punctated	2											5	1		4	3			2							2	2		
Smithsonia Zone Stamped (Podal Supports)		1							1			1																	
Baldwin Plain	66	27	1	3	3			10	48	7	5	15			53	16			43	6	2		60	6	21	24	2		
Furrs Cordmarked	8	2	1					1	12	3					10	6			3		1		4		4	5	3	1	
Saltillo Fabric Impressed																													
Basin Bayou Incised	6	1													1	1			2						1				
Santa Rosa Stamped																													
McLeod Check Stamped													1																
McVay Brushed																													
Incised			1									1																	
Zone Incised																			1										
Eroded												1																	
Vessel Base																													
Incised & Punctated																													
GROG TEMPER																													
Baytown Plain	36	5	1	1	1	1	1	2	19		5	7			25	8		3	27	3		1	40	13	16	11	2		1
Mulberry Creek Cordmarked	43	10	2			1	1	3	7			8			21	20	1	3	24	3	1		24	2	20	2	3		
Withers Fabric Marked													1																
Marksville Incised		1																					2						
Marksville Stamped																													
Eroded																													
Unidentified Incised												1																	
SHELL TEMPER																													
Mississippi Plain, *var. Warrior*	19	2						2	3		1	1			17				17				13		5	1			
Moundville Incised, *var. Carrolton*																							1						
Possible Cordmarked																													
Unidentified																													
Verticle Nodes																													
Nodes															1														
Incised & Punctated																													
Loop handle fragment																													
BONE TEMPER																													
Turkey Paw Plain	1										1	1			1				2				8	1	1	2			
Turkey Paw Cordmarked					1																					1			
Eroded																													
BONE & GROG TEMPER																													
Plain																													
BONE & PETRIFIED WOOD TEMPER																													
Plain													1																
PETRIFIED WOOD TEMPER																													
Plain												2																	
TOTAL	184	56	9	5	6	2	2	18	97	12	12	50	4	0	140	59	2	6	121	15	4	1	159	24	71	50	17	2	1
SHERDLET WEIGHT (in grams)	484	55	8	4	9	2	1	33	251	16	41	110	3	--	365	185	--	4	313	22	2	--	388	37	272	57	21	2	--
FIRED CLAY WEIGHT (in grams)	30	80	55	94	91	15	12	--	22	168	3	17	--	549	52	20	123	115	44	21	263	36	69	26	45	24	42	235	9

TABLE 6. Continued

Ceramic Types	Square and Level																																
	198N208E					198N209E									199N206E				199N207E			199N208E				199N209E							TOTAL
	1	2	3	4	5	1	2	3	4	5	6	7	8	9	1	2	4	8	1	2	3	1	2	3	5	1	2	3	4	5	6	7	
FIBER TEMPER																																	
Wheeler Plain								1			2						1				2			3			3						66
Wheeler Dentate Stamped														1				2					2				1	1					10
SAND TEMPER																																	
Alexander Incised	2	2				1		4	1						2	1				3			1		1			2					82
Alexander Pinched																											1						20
Columbus Punctated		2	2															2		1													32
Smithsonia Zone Stamped																					1												1
(Podal Supports)																											1						4
Baldwin Plain	25	26	1			12	31	9	3						22	22	1	10	3	31	7	14	41	2		7	29	5	10		1		1040
Furrs Cordmarked	8	9				22	4	12	1						6	7		1		15		1	7	1		1	6	2	3				206
Saltillo Fabric Impressed						2																											2
Basin Bayou Incised						1									1					3													20
Santa Rosa Stamped																										1							2
McLeod Check Stamped																				1				1									3
McVay Brushed																																	1
Incised																		1									1						5
Zone Incised																																	2
Eroded	2																					1	1										7
Vessel Base																							1										1
Incised & Punctated															1																		1
GROG TEMPER																																	
Baytown Plain	29	17	2	1		19	4	7	11	4	3	4			15	18		8	3	23	3	12	28	3		4	34	16	7				707
Mulberry Creek Cordmarked	25	8	1		1	17	18	10	3			3	2	1	19	8		6	2	15	1	10	14	2		7	34	6	5		1	1	595
Withers Fabric Marked																																	5
Marksville Incised																1																	5
Marksville Stamped																											1						1
Eroded																																	10
Unidentified Incised																																	2
SHELL TEMPER																																	
Mississippi Plain, var. Warrior	8		4			11	1	3	1		1		1		8	1						4	9	2		5	8		7				305
Moundville Incised, var. Carrolton												1								1													6
Possible Cordmarked																							1										1
Unidentified																																	1
Vertical Nodes																																	1
Nodes																																	1
Incised & Punctated															1																		1
Loop handle fragment																										1							3
BONE TEMPER																																	
Turkey Paw Plain	1	1														6				2		1				1	1	1					53
Turkey Paw Cordmarked				2																				1			1						8
Eroded																										1							3
BONE & GROG TEMPER																																	
Plain																																	1
BONE & PETRIFIED WOOD TEMPER																																	
Plain																				1													2
PETRIFIED WOOD TEMPER																																	
Plain																4							5					1					15
TOTAL	100	65	10	3	1	85	58	46	20	4	6	8	3	2	75	68	2	30	8	96	14	43	110	15	1	28	121	34	32	0	2	1	3231
SHERDLET WEIGHT (in grams)	102	87	10	--	3	96	80	74	11	7	5	9	9	--	52	20	--	10	3	59	5	175	211	31	--	117	248	27	26	5	1	1	6506
FIRED CLAY WEIGHT (in grams)	10	23	18	--	39	14	49	112	244	86	83	32	65	23	6	1	86	4	--	14	263	21	75	64	109	15	125	49	122	44	60	34	5439

Table 7. Ceramics from Features

Type	Feature Number																																										
	1	3	4	5	7	9	11	13	14	15	16	21	22	23	28	31	35	37	39	44	46	47	54	55	56	58	61	65	66	73	74	78	80	83	84	85	86	87	88	94	96	99	101	102
FIBER TEMPER																																												
Wheeler Plain					1		2					1								11															11	1						3		
Wheeler Dentate Stamped																																									1			
SAND TEMPER																																												
Alexander Incised	1														2																				22		1			2		2	3	4
Alexander Pinched																																			1									
Columbus Punctate				1											1																	1			9								1	
Smithsonia Zone Stamped (Podal Supports)																																								1				
Baldwin Plain	9		2	23	1	1	11	1		13	1		1		18	1				129	1	1		6	1			1	20	11	3				130	2	25			1	5	3	11	20
Furrs Cordmarked	2			6			7							2						80	1														73	1				1		1	1	2
Saltillo Fabric Impressed																																			1									
Basic Bayou Incised								1																													1							
Santa Rosa Stamped																				1															2									
Eroded																				1																								
GROG TEMPER																																												
Baytown Plain	2		2	12			2	1	1	6		1		1	1			1		34				1		1			3		4			2	73				3		3	3	1	14
Mulberry Creek Cordmarked	3		5	22			3	2		3	1		1		2				1				1	5			1		3	4	9		1	2	37	3	13		7		4	3		8
Withers Fabric Marked																																			3									
Marksville Incised																				8																								
Salomon Brushed Incised				2																																								
Possible French Fork Incised																																			1									
Mulberry Creek Cordmarked Patch																																			1									
SHELL TEMPER																																												
Mississippi Plain, *var. Warrior*		1		3												4	1							9					2	1	1				4			7				6		17
Moundville Incised, *var. unspecified*	1																																											
Moundville Incised, *var. Carrolton*																																				23								
Possible Cordmarked																																												
BONE/SAND/FIBER TEMPER																																												
Plain																																			1									
PETRIFIED WOOD/GROG/ BONE TEMPER																																												
Plain																																			1									
BONE TEMPER																																												
Turkey Paw Plain				1			1													3									1						5									
Turkey Paw Cordmarked																													1						1									
BONE AND GROG TEMPER																																												
Cordmarked																													1															
PETRIFIED WOOD/GROG TEMPER																																												
Plain																																			6									
PETRIFIED WOOD TEMPER																																												
Plain	1						1																																					
TOTAL	19	1	9	70	2	1	27	5	1	22	2	2	2	3	24	5	1	1	1	267	2	1	1	21	1	1	1	1	31	16	17	1	1	4	382	30	40	7	10	5	13	21	17	65
SHERDLET WEIGHT (in grams)	26	9	8	61	4	3	22	--	1	28	2	--	--	--	31	--	2	--	--	192	4	1	--	15	2	2	1	--	25	21	9	--	1	2	237	10	20	--	2	7	10	22		130
FIRED CLAY WEIGHT (in grams)	19	1	17	73	-	2	24	--	--	11	7	--	--	3	41	--	1	1	--	180	--	1	24	35	--	6	1	10	173	7	6	--	2	2	7131	7	12	--	1	3	128	13	54	110

Table 7. (Cont.)

Type	103	105	108	110	111	112	115a	115b	115c	115d	115e	115f	115g	115h	115j	117	119	120	121	122	123	124	125	126	135	136	138	142	143	Total
	Feature Number																													
FIBER TEMPER																														
Wheeler Plain	1																					1								32
Wheeler Dentate Stamped	1																													2
SAND TEMPER																														
Alexander Incised	4								1							1		1			3				4	1				52
Alexander Pinched																	1						1			7				10
Columbus Punctate	1																												1	15
Smithsonia Zone Stamped	1																													1
(Podal Supports)	2																													3
Baldwin Plain	8			2	1	1						1		1	1	1	1				12	1	5			1	3			491
Furrs Cordmarked				1									1		1						8	2	6							196
Saltillo Fabric Impressed					1																									2
Basic Bayou Incised																														2
Santa Rosa Stamped																														3
Eroded								1																						2
GROG TEMPER																														
Baytown Plain		1	1	1	1	5				3	2	2	4	1		5	1	3			23					1				226
Mulberry Creek Cordmarked		2	1			2		4	2	4	1		3	7		5	1			1	111	1					1	1		291
Withers Fabric Marked																					2									5
Marksville Incised																					2									10
Salomon Brushed																					1									1
Incised																					2									4
Possible French Fork Incised																														1
Mulberry Creek Cordmarked Patch																														1
SHELL TEMPER																														
Mississippi Plain, var. Warrior			3		2		1		1				1	1		1	1		2	1	1	1		2			1			75
Moundville Incised, var. unspecified																														1
Moundville Incised, var. Carrolton																														23
Possible Cordmarked															1															1
BONE/SAND/FIBER TEMPER																														
Plain																														1
PETRIFIED WOOD/GROG/BONE TEMPER																														
Plain																														i
BONE TEMPER																														
Turkey Paw Plain																					5									16
Turkey Paw Cordmarked																														2
BONE AND GROG TEMPER																														1
Cordmarke:																														
PETRIFIED WOOD/GROG TEMPER																														1
Plain																														6
PETRIFIED WOOD TEMPER																														
Plain																														2
TOTAL	18	3	5	4	5	8	1	5	4	7	3	3	9	10	3	13	4	5	2	2	170	6	12	2	4	10	5	1	1	1480
SHERDLET WEIGHT (in grams)	6	5	4	2	--	3	13	3	3	4	7	2	3	10	1	33	5	9	12	2	79	18	23	--	7	5	--	--	--	1129
FIRED CLAY WEIGHT (in grams)	--	16	10	365	--	--	2	--	2	11	30	--	5	--	4	17	2	3	4	--	69	41	27	--	14	--	--	--	--	8888

TABLE 8. WHOLE AND PARTIAL VESSELS

Ceramic Type	Plate #	Provenience	Dimensions Whole Vessels Diameter	Dimensions Whole Vessels Height	Dimensions Partial Vessels Diameter	Dimensions Partial Vessels Height	# of Sherds Represented
Sand Temper							
Alexander Incised, var. Kellogg	20	F. 100			ca. 16-17 cm	ca. 11 cm	279
Alexander Incised, var. Negro Slough	22	F. 136			15.5 cm	17.2 cm+	24
Grog Temper							
Marksville Incised, var. Yokena	26	F. 44			ca. 23 cm	15 cm+	15
Mulberry Creek Cordmarked	25	F. 123			ca. 31.5 cm	36 cm	76
Shell Temper							
Mississippi Plain, var. Warrior	27	Bu. 1	20.1 cm	15 cm			
Mississippi Plain, var. Warrior	28	Bu. 7	15.1 cm	10.6 cm			
Moundville Incised, var. Carrolton	30	Bu. 6			ca. 28 cm	29 cm+	2
Moundville Incised, var. Carrolton	31	Bu. 20			ca. 31 cm	33 cm+	5
Moundville Incised, var. Carrolton	32	F. 85			ca. 19 cm	?	5
Incised plate	33	Bu. 29			ca. 30 cm	ca. 5 cm	13

the analysis the pre-Mississippian ceramics are generally reported by type only.

The four major temper groups of the Central and Upper Tombigbee River Valley—fiber, sand, grog and shell, as well as bone, petrified wood, and various combinations of some of these tempers—were recovered at Kellogg. For types previously defined, detailed descriptions are not presented but references are given for original and supplementary data on each type. Also, the identified cultural affiliations of the ceramics types are discussed.

Fiber Tempered Ware

The Wheeler Series (Haag 1942; Sears and Griffin 1950). The Wheeler ceramics are the earliest pottery types made in the Upper and Central Tombigbee River Valley and are affiliated with the Gulf Tradition (Caldwell 1958; Bullen 1970; 1974), or the Gulf Formational Stage (Walthall and Jenkins 1976 ; Jenkins 1978, 1979), the beginning of which is estimated to date as early as 2000 B.C. (Rucker 1974; Blakeman, Atkinson, and Berry 1976) and as late as 1200 B.C. (Jenkins 1975) in the Tombigbee Valley.

At the Kellogg site the Wheeler series ceramics comprise a small percentage of the sherd assemblage recovered. No features exclusively contained these types nor were any sherds found in definite association with any other type or types. Of the 110 Wheeler sherds recovered at Kellogg, 98 are Wheeler Plain. Sixty-six of these were recovered from the general excavation levels and 32 were mixed in feature fills of later temporal periods. The 12 remaining sherds are Wheeler Dentate Stamped, ten of which were from the general excavation levels and two were mixed in feature fills. Missing entirely were the types Wheeler Punctate and Wheeler Simple Stamped.

The fiber content of the sherds varies from sparse to dense and the pastes vary from sandless to moderately sandy. The sherds with the sandy pastes are harder and the surfaces are generally smoother than the sandless examples. Because of the small size of the individual sherds, very little data on vessel forms were obtainable, but some

appear to have come from small to medium sized, straight sided vessels. Sherd thickness varies from 6 mm to 14 mm and the few rim sherds recovered are straight with flattened or rounded lips.

Jenkins (1979) proposes dividing Wheeler Plain ceramics into two varieties based on the quantity of sand and fiber present in the paste. At Kellogg, sherds of both variety Wheeler, with sparce sand and dense fiber, and variety Noxubee, with sandy pastes and sparce fiber, were recovered. As mentioned above, however, Jenkins' report describing these varieties was not available during analysis so numerical counts for each variety at Kellogg is not presented. Jenkins has outlined only one variety of Wheeler Dentate Stamped (variety Warsaw), which is described as having sparce fiber. While some of the Wheeler Dentate Stamped sherds from Kellogg appear to fit this description, others contain dense fiber.

Sand Tempered Ware

Sand tempered ceramics comprise the largest percentage of the total assemblage and represents the longest time span over which the site was occupied by pottery-making people. These various wares encompass three consecutive cultural periods.

The Alexander Series (Haag 1939; DeJarnette and Wimberly 1941). These medium to coarse sand tempered ceramics follow in time the fiber tempered ceramics and were produced in the Late Gulf Formational period known as the Henson Springs phase (DeJarnette, Walthall, and Wimberly 1975; Jenkins, Curren, and DeLeon 1975; Jenkins 1979). Alexander ceramics are found from the Tennessee River Valley south to the Gulf Coast and west to the lower Mississippi Valley (Haag, 1939, 1942; Wimberly 1960; Phillips 1970). The types represented at Kellogg are Alexander Incised, Alexander Pinched, Columbus Punctated, Smithsonia Zone Stamped, Mandeville Stamped, and O'Neal Plain.

The Alexander series is represented at the Kellogg site by a total of 220 sherds and two partially restorable vessels. Usually no attempt was made to sort plainware sherds as O'Neal Plain because of sorting difficulties between them and Baldwin Plain, another sand tempered type. Following Jenkins (1979), therefore, most plain

sand tempered sherds with no special distinctive charactersitics have been classified as Baldwin Plain (see discussion of the type below).

Alexander Incised. Alexander Incised sherds recovered and analyzed number 134; 82 are from general excavation levels and 52 are from feature fills. The motifs depicted on these sherds vary from curvilinear, from simple to intricate, and from sloppily to carefully executed. Jenkins (1979) established several varieties based on motif variation, all of which are present in the Kellogg sample.

Two partial restorable Alexander Incised vessels were recovered from small pits at the Kellogg site. The first, discussed below, was found in Feature 100. The vessel was exposed by the roadgrader during the stripping operation and broken into numerous small pieces, although it was already fragmented. About three-fourths of the vessel was painstakingly restored, revealing a form never before encountered on the Tombigbee River and possibly anywhere in the Americas. Following are descriptions of the individual characteristics of this presently unique Alexander Incised vessel, which is herein named variety Kellogg.

Partial Vessel 1: Alexander Incised, variety Kellogg (Plate 20; Figure 12).

Method of Manufacture: Appears to have been hand molded but this is uncertain.

Paste: Temper consists of fine to medium coarse sand; texture is fine, well consolidated; core color is dark gray; surface colors, both interior and exterior, vary from dark buff to dark brown.

Form: Shape is as illustrated in Figure 12, with three long sides and three short sides. From the point of maximum diameter the rims angle inward toward the oriface and the lower portion of the vessel angles inward to the base. The base is flat with six podal supports consisting of three sets of two situated below each of the three short sides of the vessel. The corners are peaked and the rim edges between the corners are slightly concave.

Size: Because the larger reconstructed portions of the vessel could

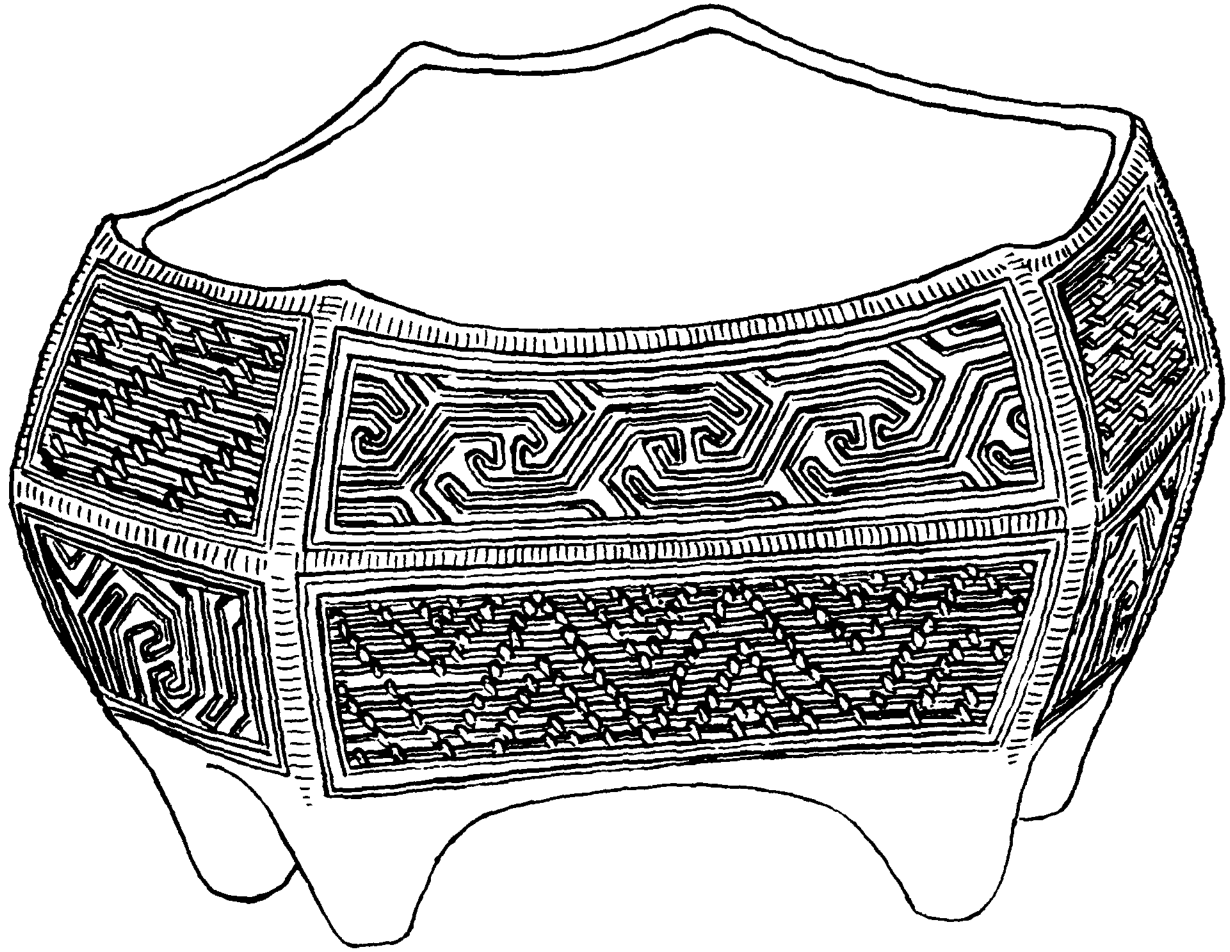


Figure 12. Artist's reconstruction of Alexander Incised, variety Kellogg partial vessel.

not be joined together, the exact dimensions could not be ascertained; it is estimated, however, to have been between 16 and 17 cm in diameter. The height was approximately 11 cm.

Thickness: Varies between 6 mm and 10 mm.

Surface finish and decoration: Both the interior and exterior are well smoothed. Two decorative motifs are present, as illustrated in Figure 12. The upper panels on the long sides of the vessel consist of complicated incisions forming at least three linked hexagons running parallel to the rim. The lower panels on the long sides have motifs consisting of parallel incised lines with five diagonal lines of small punctations overlaying them. The punctations are small and oblong in shape. This particular decoration is similar to that on the ceramic type known as Crump Punctated (DeJarnette, Walthall, and Wimberly 1975). The lower panels on the short sides have single incised hexagon-shaped motifs situated perpendicular to the rim rather than parallel like those on the upper panels of the long sides. The panels are bordered by two incised lines and are separated by thin bands of closely spaced short incisions. Two parallel incised lines run completely around the vessel just below the lip.

Comments: Two Alexander Incised rim sherds very similar to the rim of the partial vessel were found on the surface at the Kellogg site (Plate 21g,h). Both are from non-circular vessels and both decorative motifs described above are present. One sherd has the complicated incised design and the other has the incised/punctation design.

Prior to the discovery of this vessel, six-sided prehistoric pottery and vessels with six podal supports were apparently unknown for the Americas (James B. Griffin 1980, Personal Communication). Some unusual early vessel forms have been reported but none have more than four sides. Bullen (1972) mentions and Ford (1969:171-172) illustrates square fiber tempered vessels from the Orange period in Florida but a search of North, Central, and South American literature has failed to reveal a vessel form

similar to the Kellogg specimen.

The second partial Alexander Incised vessel was found in Feature 136, a small pit which also contained seven Alexander Pinched sherds and one Alexander Incised sherd. These sherds represent at least four additional vessels.

Partial Vessel 2: Alexander Incised (Plate 22; Figure 13).

Method of Manufacture: Coil.

Paste: Temper consists of fine to coarse sand; texture is fine and the paste is well consolidated; core color varies from dark buff to dark gray; interior and exterior surface color varies from dark buff to dark gray.

Form: Beaker; straight-sided but slightly constricting above the mid-section of the vessel; base is flat with six podal supports; rim portion of the vessel is not present.

Size: Vessel is 15.5 cm in diameter and at least 17.2 cm in height; exact height cannot be determined because the entire rim portion of the vessel is not present. Thickness is 6 mm to 12 mm.

Surface Finish and Decoration: The interior and exterior surfaces are well-smoothed. Decoration consists of cross-hatched incising confined to a horizontal band 6.2 cm in width. The band is bordered above and below by three parallel incised lines.

Comments: This vessle's motif appears to be very similar to that of *variety Negro Slough*, described by Jenkins (1979). However, Jenkins states that the vessel form is probably conical and that podal supports were not in evidence. As noted above, however, Partial Vessel 2 has six podal supports like Partial Vessel 1. A number of form attributes will probably be found to exist in combination with the various decorative motifs on Alexander ceramics. Thus the data provided by this vessel is considered supplementary to Jenkin's original description of *variety Negro Slough*.

Alexander Pinched. This type is represented by 30 sherds; 20 are from the general excavation levels and 10 are from feature fills.

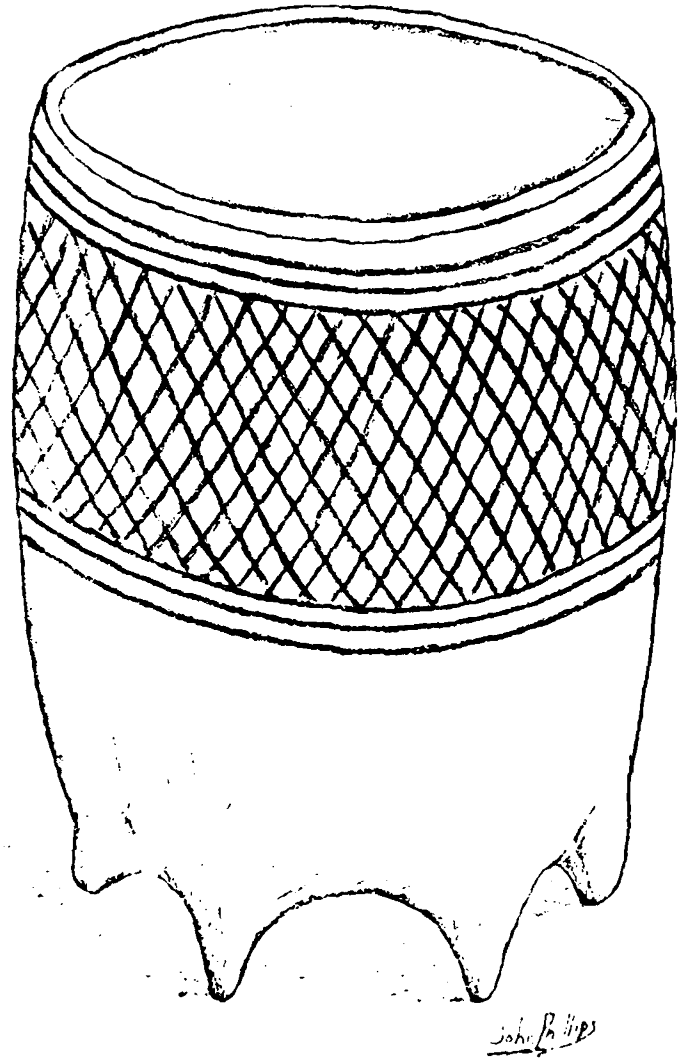


Figure 13. Artist's reconstruction of Alexander Incised, *variety Negro Slough* partial vessel.

These sherds have decorations that appear to have resulted from pinching of the wet clay between the fingernails or punctating with a fingernail (Plate 23). Jenkins (1979) has proposed only one variety of Alexander Pinched, and calls it variety Prairie Farms.

Columbus Punctated. Forty-seven sherds, 32 from the general excavation levels and 15 from feature fills, were classified as Columbus Punctated. Although Columbus Punctated typically displays small hemicoidal punctations (Heimlich 1952: Jenkins 1979), sherds from Kellogg with punctations of other miscellaneous shapes have been assigned to the type, including round, square, and triangular shapes. Jenkins (1979) states that the exact chronological placement of Columbus Punctated in the Gainesville Lake could not be determined. However, the type is definitely part of the Alexander Series as evidenced by the Columbus Punctated decoration on the six-sided vessel recovered from Kellogg and described above.

Smithsonia Zone Stamped. Only two sherds of Smithsonia Zone Stamped (Haag 1942) were recovered, one from the general excavation levels and one from feature fill. This is not a common type in the Upper and Central Tombigbee Valley but a few sherds have been found by the Mississippi Archaeological Survey in Lowndes and Monroe Counties (Brookes 1979, personal communication). None are reported from other sites in the Tombigbee Basin.

Mandeville Stamped (Ford and Quimby 1945; Phillips 1970). This type was originally defined at the Tchefuncte site (Ford and Quimby 1945) and recognized as having a probable association with the Alexander Series. This association is supported by the recovery of Alexander ceramics and a rim sherd of Mandeville Stamped in undisturbed context just below the plowzone at 22Lo538, the Vaughn Mound site (Atkinson 1974:137, Plate 8g). Two sherds of Mandeville Stamped, variety unspecified were recovered from the surface of the Kellogg site. On one specimen (Plate 23f) both surfaces are smoothed and dark brown in color, the core is medium brown, and thickness is 10 mm. Decoration present consists of three parallel rows or columns, each

having a series of dentated impressions, three abreast and 7 mm wide. The rows are separated by a plain area 3-5 mm in width. The other specimen (Plate 23g) is dark gray/brown throughout, with the interior and exterior smoothed. This sherd is 7 mm thick. Decoration again consists of parallel rows or columns but the impressions vary from two to five abreast and are from 4 to 10 mm wide. The plain bands between these rows vary from 3 to 9 mm in width.

O'Neal Plain. As mentioned above, this is the plainware counterpart of the decorated Alexander ceramics and many sherds recovered are probably from plain parts of decorated vessels. They are not easily distinguishable from Baldwin Plain unless a particular characteristic is present, such as rim bosses. Podal supports, a diagnostic trait of Alexander ceramics, can usually be assumed to be O'Neal Plain, although the vessel may have been decorated elsewhere. At Kellogg no definite O'Neal Plain rims were recovered but seven podal supports were. Since no other sand tempered plain sherds were found in definite contemporary context with Alexander decorated ceramics, all such sherds have been classified as Baldwin Plain to avoid arbitrary and sometimes erroneous sorting.

Baldwin Plain. This type, as defined by Jennings (1941) and Cotter and Corbett (1951), is the plainware counterpart of Saltillo Fabric Impressed and Furrs Cordmarked, which are associated with the Miller I and Miller II periods. Variations in paste color, however, have often resulted in arbitrary sorting of plain sand tempered sherds between the Alexander Series type O'Neal plain and Baldwin Plain. As mentioned above, unless sherds possess distinctive Alexander characteristics they cannot be consistently and confidently sorted as O'Neal Plain rather than Baldwin Plain. This problem has been recognized by Jenkins (1979) who has recently proposed classifying all sand tempered plainware sherds with no distinguishing characteristics as varities of Baldwin Plain. We have followed Jenkins in sorting the Kellogg plainware sand tempered sherds as Baldwin Plain (with the exceptions noted above under the discussion of the type O'Neal Plain).

The presence of Alexander, Furrs, and Saltillo sherds at the Kellogg site indicates that our Baldwin Plain category includes plainware counterparts of some or all of these decorated sand tempered ceramics. It is also possible that other similar plainware ceramics more commonly occurring farther south in the valley, such as Franklin Plain and/or McLeod Plain (Wimberly 1960), are included in the Baldwin Plain category.

A total of 1,531 sherds have been classified as Baldwin Plain; 1040 are from the general excavation levels and 491 are from feature fills. Rim form varies from slightly inverted to straight to slightly everted. Small interior rim folds and larger exterior rim folds occur in the assemblage. Lips vary from rounded to flattened and sherd color ranges from grays to tan/brown to reddish orange. The surfaces are generally smoothed on both the interior and exterior and some exhibit burnishing. Although most sherds are too small to provide data on vessel size and form, a few appear to be from medium to large vessels, some of which appear to have been straight sided; one flat base was recovered.

Furrs Cordmarked (Jennings 1941; Cotter and Corbett 1951). This type is represented by 402 sherds; 206 are from the general excavation levels and 196 are from feature fills. Most sherds are small but appear to be from medium to large vessels. Interiors are smoothed and the exterior cordmarking is often partially smoothed over. Color ranges from brown to gray to reddish-orange. Rims are usually straight and lips are either rounded or slightly flattened. While fine sand is by far the most popular tempering agent at Kellogg, some sherds contain medium sand as well. Furrs Cordmarked is affiliated primarily with the Miller II period.

Saltillo Fabric Impressed (Jennings 1941; Cotter and Corbett 1951). Only four sherds of this type were recovered at Kellogg, two from the general excavations and two from feature fills. No rim sherds were recovered nor were any sherds large enough to indicate vessel form or size. These sherds probably correspond to Jenkins' (1979) *variety*

Tombigbee. Although Saltillo is considered a marker for the Miller I period, this type remained in the Miller assemblage through the Miller II period as a minority ware (Jennings 1941; Cotter and Corbett 1951; Jenkins 1975). The four sherds from Kellogg are assumed to represent a part of the Miller II ceramic assemblage.

Basin Bayou Incised. This Porter Hopewell sand tempered type is a minority ware in the Upper and Central Tombigbee Valley, more commonly occurring in the Lower Tombigbee Valley (Willey 1949; Wimberly 1960). Twenty-two sherds were recovered at Kellogg, 20 from the general excavation levels and two from feature fills (Plate 24b,c).

Surface color ranges from buff to brown and average thickness is about 6.5 mm. Rims are straight with exterior folds and lips are rounded. Most of these sherds exhibit carefully executed curvilinear lines and probably represent Jenkins' (1979) variety River Bend; one sloppily incised sherd is probably Jenkins' variety West Greene. One plainware rim sherd with an exterior rim fold has a paste identical to many of the Basin Bayou specimens and is probably associated with the type. Sherds of this ceramic type have been found in association with Late Miller I and Miller II ceramic assemblages (Jenkins 1979). At Kellogg the type is probably associated with Miller II.

Santa Rosa Stamped. This minority type (Plate 24g) is also more commonly found in the Lower Tombigbee Valley (Willey 1949; Wimberly 1960). Five sherds were recovered, all but two of which were in feature fills. No rim sherds are included. Colors are reddish buff and dark brown and thickness averages about 6.5 mm. The sherds are tempered with fine sand and display unzoned rocker stamping. Jenkins, Curren and DeLeon (1975) suggest a Miller I association for the type, a designation supported by the analysis of the Gainesville material (Jenkins 1979). At Kellogg, due to the apparent lack of a Miller I occupation, these sherds probably have a Miller II association. Phillips (1970:93) compares the type to Indian Bay Stamped, variety Shaw, of the Lower Mississippi Valley.

Alligator Bayou Stamped. One small body sherd (Plate 24a) of this

Porter Hopewell type (Willey 1949) was found on the surface. It is buff colored and measures 5 mm in thickness. Jenkins (1979) places the type in a late Miller I and Miller II context. As noted for Basin Bayou Incised, this sherd probably has a Miller II association at Kellogg.

McLeod Check Stamped. Three sherds (Plate 21o) of this Lower Tombigbee Valley type (Wimberly 1960) were recovered from the general excavation levels. They are not large enough to allow an estimation of vessel size or form and no rims are included. They are orange-brown or gray in color and vary from 6 mm to 8 mm in thickness. These sherds would probably conform to Jenkins' (1979) variety Bigbee in that they have square checks. The type is considered to have a Late Miller II affiliation (Jenkins 1979).

McVay Brushed. One example (Plate 24e) of McVay Brushed (Wimberly 1960) was recovered from the general excavation levels. The sherd has relatively parallel brush marks but those on the other are somewhat irregular. Jenkins (1978a) has named the pottery found in the Central Valley variety West Green and believes it to have a Late Miller II cultural affiliation (Jenkins 1979, personal communication).

Unidentified decorated sand tempered sherds. A total of 17 sand tempered sherds from the general excavation levels and three from feature fills were either too eroded or too small to allow definite assignments to established types. Of these 17 sherds, four have either single or multiple parallel incised lines and a fifth has multiple parallel and perpendicular incised lines. Two sherds (Plate 24o) have single incised lines with adjacent punctations. These may be examples of Basin Bayou Incised (see Wiley 1949: Plate 18e). Two small rim sherds have small punctations separated by an incised line (Plate 24m,n).

Bone Tempered Ware

Although bone tempered pottery is a minority ware in the Central and Lower Tombigbee drainage, the use of bone tempering occurred

sporadically over a long period of time and encompassed a large area. Ceramic types sometimes containing bone are reported from Alabama, Arkansas, Louisiana, Mississippi, Texas, and several of the Plains states. These types span the range of A.D. 500 up to historic times. In Lee County, in northeast Mississippi, Jennings (1941:189) reports crushed bone in Wilson Plain, a Chickasaw pottery type, and Swanton (1946:552) reports the addition of bone and sand to selected clay by the post-contact Alabama Indians. Three bone tempered sherds were recovered during the excavations at the Bynum site (Cotter and Corbett 1951:22) in northeast Mississippi and Wimberly (1960:123) places the bone tempered ceramics from the McVay Village site in southern Alabama in an Early to Middle Woodland context. Bone tempering during the Woodland period is also reported from the Pascagoula River drainage of southern Mississippi (Atkinson and Elliott 1979; Conn 1978). Jenkins (1979) assigns bone tempered types in the Gainesville Lake area to the Late Miller II period and its occurrence in Feature 44 at Kellogg tends to support this assignment. In addition, a large sherd found in an apparent Late Miller II pit at the Vaughn Mound site has been, upon recent re-examination, determined to possess tiny bone fragments, rather than shell as stated in the site report (Atkinson 1974:129; Plate 9a). This sherd otherwise possesses characteristics of Marksville Incised, variety Yokena, except for the absence of grog tempering.

Below, Jenkins' (1979) type names are utilized but the Kellogg sherds sometimes contain inclusions not present in his specimens. Of the 85 Kellogg sherds containing bone tempering, 78 contained only bone and sand, one contained bone, sand and fiber, another also contained grog, and one contained petrified wood and grog.

Turkey Paw Plain, variety Turkey Paw (Jenkins 1979). The 69 Kellogg sherds of this type (53 from general excavation levels and 16 from feature fills) contain sand and sparce to moderate amounts of burned bone with individual pieces measuring from less than 1 mm to 6 mm in length. The bone sometimes occurs in various combinations with grog, fiber, and petrified wood tempering. Texture varies from well consolidated to contorted depending on size and abundance of the temper.

Core color is gray to buff with surface colors gray to brown. The sherds appear to represent medium to large vessels with the sides vertical or tapering to a flat base and rims are straight with rounded lips. One rim sherd represents a cylindrical vessel with a diameter of about 20 cm at the rim. Thickness of the sherds vary between six and 23 mm and the interior and exterior are usually well smoothed. One base sherd recovered is flat while another has a pseudo-annular ring.

Turkey Paw Cordmarked, variety Moon Lake (Jenkins 1979). Eight Turkey Paw Cordmarked sherds were recovered from the general excavation levels and two were recovered from feature fills. The paste of this type is the same as Turkey Paw Plain except no fiber or petrified wood temper is present and surface colors are buff to dark brown. The vessel forms identified are generally the same as for the plainware except lips are slightly flattened on the specimens recovered; no base sherds were recovered. One feature sherd was from an Early Miller III pit (Feature 84) and might be culturally associated. The other, however, was from a Mississippian pit (Feature 66) and was probably intrusive.

Petrified Wood Tempered Ware

Twenty-three petrified wood tempered plainware sherds were recovered from Kellogg; 15 were from general excavation levels and eight were from feature fills. A possible association of this type and bone tempered pottery is indicated by the presence of both bone and petrified wood in one sherd recovered. Also, bone tempered ceramics occurred in two of the three features that contained petrified wood tempered sherds. Six sherds recovered from Feature 84 contained both petrified wood and grog.

The temper of the Kellogg sherds consist of moderate to abundant amounts of angular pieces of petrified wood in a sandy paste, although grog also occurs in a few examples. The petrified wood particles vary in length from less than 1 mm to over 10 mm. The sherds appear to be from medium to large straight-sided vessels and thicknesses range from 5 to 9 mm. Unfortunately, no rim sherds were recovered.

Since these examples appear to represent the first petrified wood tempered ceramics found on the Tombigbee, type names are not assigned

at this time because such pottery may be restricted only to the Kellogg site. If other such ceramics should be found in the future, the assignment of type names would then be in order.

Grog Tempered Ware

Baytown Plain. Originally named Tishomingo Plain (Jennings 1941), this pottery type has recently been designated by Jenkins (1979) as Baytown Plain with the local expressions identified as new varieties of that well established type of the Lower Mississippi Valley (see Phillips, Ford, and Griffin 1951; Phillips 1970). Since such grog tempered pottery from the Upper and Central Tombigbee River Valley is physically, culturally, and temporally similar to Baytown Plain the new classification of Tishomingo as that type is perfectly logical and serves to simplify the ceramic typology of the area. In the Upper and Central Tombigbee Valley Baytown Plain is primarily diagnostic of the Miller III period along with its companion type Mulberry Creek Cordmarked (formerly Tishomingo Cordmarked; see discussion below).

At the Kellogg site 933 sherds were recovered; 707 were from the general excavations and 226 were in feature fills. The Baytown Plain sherds from Kellogg have not been classified by varieties, i.e., variety Tishomingo, which Jenkins identifies as having less grog and more sand than his variety Roper. Although the sherds might best fit one or the other we have refrained from splitting hairs as Jenkins has done, primarily because of the fact that he has not satisfactorily documented distinct temporal, cultural or spatial significance in the variations between the two. There may, in fact, be no significance at all in the quantity of grog in one sherd as opposed to another for such a distinction assumes that the tempering materials in a vessel are distributed uniformally. Examination of the sherds making up a partially restorable Baytown Plain vessel from the Tibbee Creek site indicates that even distribution did not always occur, for some sherds displayed grog tempering while others displayed no grog at all (O'Hear et al. 1979:77).

Mulberry Creek Cordmarked. In conformity with the re-classification of the plain grog tempered ceramics as Baytown Plain, the cordmarked grog tempered sherds from Kellogg are classified herein,

following Jenkins (1979), as Mulberry Creek Cordmarked (see Haag 1939; Phillips 1970) rather than Tishomingo Cordmarked. As with the plainware, the Mulberry Creek Cordmarked sherds from Kellogg have not been classified by varieties, i.e., variety Tishomingo, which Jenkins identifies as having less grog and more sand than his variety Aliceville.

Mulberry Creek Cordmarked pottery from Kellogg is represented by 886 sherds from feature fills and the general excavation levels and one partially restored vessel (Plate 25) from Feature 123, a circular, basin-shaped Miller III pit. Of the total sherds, 595 were recovered from the general excavations and the remaining 291 were in feature fills. A very small percentage of the rim sherds of this type exhibit either a poorly smoothed band or a crudely incised line a few centimeters below and running parallel to the lip. The rim smoothing treatment is present in the Gainesville Lake sample (Jenkins 1979), and is also found on Maramec Cordmarked, a limestone tempered ware of the Baytown period in Missouri (Marshall 1965).

The partial vessel is deep and conical-shaped; it has an estimated oriface diameter of 31.5 cm and is 36 cm in height. The rim is straight and the lip varies from flattened to rounded; thickness varies from 6 mm just below the lip to 8 mm at the base. The application of the cordmarking is rather haphazard and apparently covered the entire vessel but the cordmarking on the base is almost entirely obliterated by subsequent smoothing. Scattered over the body of the vessel are smoothed or partially smoothed areas, possibly resulting from the use of a plain paddle after the cordmarking had been applied.

Withers Fabric Marked. Originally grog tempered fabric marked pottery found in the Central Tombigbee Valley was identified and named Gainesville Fabric Impressed (Nielsen and Moorehead 1972; Nielsen and Jenkins 1973) but Jenkins (1979) has now re-classified it as Withers Fabric Marked, a Lower Mississippi Valley type (see Phillips 1970). In the Central Tombigbee Valley it is a companion type to Baytown Plain and Mulberry Creek Cordmarked of the Miller III period. Only 10 examples of the type were recovered at Kellogg, five from the general

excavations and five from feature fills. The low quanity of the type at Kellogg conforms with the evidence from site surveys which indicate that it is primarily confined to the area below Nash Creek, located about 35 km south of the Kellogg site (Rucker 1974; Blakeman, Atkinson, and Berry 1976).

Marksville Incised. This ceramic type typically occurs in the Lower Mississippi Valley and along associated tributaries (Ford and Willey 1940; Phillips 1970) but also occurs as a minority type in other areas. In the Upper and Central Tombigbee Valley Marksville Incised is generally associated with the Miller I and Miller II periods (Bohannon 1972; Jenkins 1979). At Kellogg a large section of a Marksville Incised, variety Yokena (Phillips 1970) vessel (Plate 26a) and eight variety unclassified sherds were found in Feature 44, a Late Miller II pit which yielded a radiocarbon date of A.D. 780±205. Variety Yokena is diagnostic of the Issaquena phase, which has been radiocarbon dated between A.D. 435 and 795 (Greengo 1964:110). These dates indicate contemporaneity of the Issaquena phase with the Late Miller II through Early Miller III periods. Moreover, at the Vaughn Mound site (22Lo538), located 10 km south of the Kellogg site, a large section of a Marksville Incised, variety Yokena vessel was found in a pit which yielded radiocarbon dates of A.D. 390±70 and 730±90 (Atkinson 1974:129). Also occurring in this pit were Baldwin Plain and Mulberry Creek Plain sherds, indicating a Late Miller II association. The presence at Kellogg of two Marksville Incised body sherds in Feature 123, a Miller III pit, indicates a possible late occurrence for Marksville ceramics in the Tombigbee Valley. Although Jenkins (1979) places Marksville ceramics in a Late Miller I through Late Miller II context, seven out of eight Marksville sherds from Gainesville features occurred in Miller III pits (Jenkins 1979:121-123).

Among the 15 Marksville Incised sherds recovered at Kellogg, the large rim sherd of variety Yokena (Plate 26a) from Feature 44 was the only specimen identifiable to variety. Part of a hemispherical bowl, it has a straight rim with an exterior fold 9 mm in width; the lip is

flattened and thickness of the vessel is 6 mm. The vessel has an estimated maximum diameter of 23 cm. The surface is plain for 39 mm below the lip. The incised design consists of broad, shallow lines apparently executed on a partially dried paste. The exterior is burnished, the interior is smoothed, and the surface color ranges from medium brown to dark gray; core color is a very dark gray. Although only 12 mm of the rim is present, a peaked or scalloped rim is indicated by the rim's angle to the remainder of the sherd.

The remaining five sherds of Marksville Incised are from the general excavation levels. Color of the Marksville Incised ceramics as a whole ranges from buff to very dark gray and thickness ranges from 5 to 9 mm.

Marksville Stamped, variety Manny. One sherd of Marksville Stamped, variety Manny (Ford and Willey 1940; Phillips 1970) was recovered from the general excavations. This sherd has a well-smoothed interior and the exterior exhibits medium-sized dentate rocker stamping zoned by incised lines. Color of the sherd is dark gray throughout and it is 5 mm thick. Variety Manny is associated with the Late Marksville, Issaquena phase of the Yazoo Basin (Phillips 1970) and the Baptiste phase on the Marksville Prairie (Toth 1974).

Salomon Brushed. One example of Salomon Brushed, variety unspecified was recovered from Feature 123, a Miller III pit. This example has a poorly-smoothed interior and the exterior is brushed. The interior and exterior surfaces are dark buff and the core is a light buff. In the Yazoo Basin this type occurs in the Baytown period (Phillips 1970) and in the Miller III period in the Tombigbee Basin (Jenkins 1979).

French Fork Incised, variety Unspecified. One possible example (Plate 24h) of French Fork Incised (Phillips 1970) was recovered from Feature 84 at Kellogg. The interior and exterior are well-smoothed; the former is medium brown and the latter is dark brown. The core is dark gray. The rim is straight with vertical punctations or short incisions just below the lip, which is flattened and slightly beveled

to the interior. The incising consists of five thin, horizontal lines just below the edge of the rim and diagonal incised lines on either side of a curvilinear motif. The paste is sandless with sparsely distributed pieces of clay or grog. The vessel shape is not discernable. For the Yazoo Basin Phillips (1970) suggests a mainly Coles Creek association, which is coeval with the Miller III period. Although the sherd looks similar to French Fork Incised, it may in fact be from a poor quality Alexander Incised vessel with a paste to which no sand was added, and the scattered clay pellets in the paste might not have been intentionally added. This possibility is supported by the recovery of a sand tempered body sherd from Level 1 with an almost identical motif. Thus, it is possible that these sherds represent a degenerate form of Alexander Incised.

Miscellaneous Grog Tempered Ware. Sixteen grog tempered sherds were either too eroded or too small to be typed. Two of six definitely incised sherds were recovered from the general excavation levels and the other three were from feature fills. Also, an apparent patch for a Mulberry Creek Cordmarked vessel was recovered from Feature 84. This piece displays cordmarking in relief rather than as impressions.

Shell Tempered Ware

This ware, produced during the Mississippian period, represents the most recent prehistoric ceramics in the Kellogg assemblage. Most of the types recovered have been found at the large ceremonial center at Moundville, Alabama, located about 170 km (100 miles) to the southeast on the Black Warrior River (see Steponaitis 1978).

Mississippi Plain. Three hundred eighty sherds of Mississippi Plain (Phillips 1970; Steponaitis 1978) were recovered; 305 were from the general excavations; 75 were from feature fills, and three large sherds were in direct association with human skeletons of Mississippian affiliation. Since most of the decorations on sherds and vessels found at Kellogg occur just below the rim, some of the plainware sherds originally could have been part of decorated vessels. In addition to the sherds, two complete vessels of Mississippi Plain (described below)

were found with burials. All of the plainware ceramics from Kellogg conform to the type Mississippi Plain, variety Warrior, (previously called Warrior Plain) as defined by Steponaitis (1978).

The vessel forms represented at Kellogg are the globular and sub-globular jar. Most vessels appear to have lacked flaring rims, but an exception is represented by a flaring rim sherd recovered from the fill of Burial 5. Thicknesses of vessels range from 3 mm to 19 mm and surface colors range from buff to very dark gray.

A complete globular jar (Plate 27) found with Burial 1 is tempered with coarse shell and has two opposing loop handles, each of which have two small nodes arranged vertically. The diameter of the oriface is 17.4 cm, maximum diameter is 20.1 cm, and the vessel is 15 cm in height. The second complete vessel (Plate 28), found with Burial 7, is sub-globular in shape and has a slightly flattened base. It originally had two small loop handles but one is missing. The diameter of the oriface is 11.6 cm, maximum diameter is 15.1 cm, and the height is 10.6 cm.

Moundville Incised, variety Moundville (Steponaitis 1978). During the 1974 testing of the site (Blakeman 1975), a large rim sherd of variety Moundville (Plate 29) was found in a small, deep post mold. This sherd, erroneously identified in the testing report as Moundville Black Filmed, displays a series of connected arches around the upper portion of the vessel. The arch is bordered above by short incisions and an incised circle is present at the junction of the two arches present. A radiocarbon date of A.D. 1195±76 was obtained on charcoal from the postmold (Blakeman 1975:95-96, 177).

Moundville Incised, variety Carrolton (Steponaitis 1978). This variety is represented by two partial vessels from burials and one fragmented partial vessel from Feature 85 that could not be restored. The partial vessel of variety Carrolton (Plate 29) from Burial 6 is part of a large, globular jar with an everted rim. Below the rim two parallel incised lines form a series of arches around the vessel. The diameter of the oriface was about 28 cm and the height was at least

29 cm. The vessel from Burial 20 is also part of a large, globular, coarse shell tempered jar with an everted rim (Plate 31). The vessel has three parallel incised lines which form a series of arches around the vessel. One loop handle is present and the complete vessel probably had a second one on the opposite side; two nodes are present on the loop handle, one on the upper portion and the second in the center of the handle. The diameter of the oriface was about 31 cm and the height was at least 33 cm. The large rim section (Plate 32a) from the vessel found in Feature 85 is similar to the foregoing examples. The decoration consists of three parallel incised lines. The diameter of the oriface was about 19 cm.

Moundville Incised, variety Snows Bend. The only other identifiable variety of Moundville Incised consists of two sherds of variety Snows Bend (Steponaitis 1978). One example from the surface (Plate 32b) has two rows of arches formed by punctations. A second sherd (Plate 32c), found unassociated with the skeleton in the fill of Burial 17, has two discernible parallel incised lines with punctations between the lines and outside the uppermost line. The lines on this sherd seem to represent a somewhat zig-zag motif as opposed to the flowing arch usually associated with this type.

Moundville Incised, variety unspecified (DeJarnette and Wimberly 1941; Steponaitis 1978). Seven sherds were found on the surface and one was recovered from feature fill. These sherds were too small to be confidently assigned to any particular variety. Also, the small size precludes any estimate of vessel size or form.

Miscellaneous Incised. A large sherd (Plate 33) found in association with Burial 29 represents the only example of its type, both in vessel form and decorative motif, at Kellogg. Vessel form is a plate, or extremely shallow bowl, with an estimated maximum diameter of no less than 30 cm and an estimated height of 5 cm. Thickness varies from 7 mm at the approximate center of the vessel to 10 mm at the edge below the lip. The vessel form could correspond to McKenzie's (1966) description of a plate form with a thickened rim. The paste is

the same as Mississippi Plain, variety Warrior. The decoration consists of poorly executed dry paste incised chevrons located on the interior of the rim. The chevrons are slanted to the left and their apex apparently lie slightly below the lip, which is not present on the sherd. This vessel form occurs in a Moundville I context (Steponaitis 1979, personal communication) and the motif probably has some affinity to Carthage Incised, variety Moon Lake (Stephonaitis 1978). A similar motif is pictured by Moore (1900:315-316) on burial urn covers from Durant Bend on the Alabama River in central Alabama.

Miscellaneous Shell Tempered Ware. Two sherds from the general excavations appear to be cordmarked but they are so eroded that this rare surface treatment is very uncertain. However, a few cordmarked shell tempered sherds have been found in the Gainesville Lake (Jenkins 1979:91). Other miscellaneous sherds include three loop handle fragments and one rim sherd with three nodes oriented perpendicular to the rim. All were recovered from the general excavation levels.

Summary

Based on the ceramic types recovered, all typical post-Archaic cultural groups of the Upper and Central Tombigbee River occupied the Kellogg site, with the probable exception of Miller I. Non-occupation during Miller I is indicated by the insignificant quantities of Saltillo Fabric Impressed sherds recovered (four). Since Saltillo appeared during Late Gulf Formational times and continued into Miller II as a minority ware, these sherds were probably associated with one or the other of these cultures. Early and Late Gulf Formational, Miller II, Miller III, and Mississippian period occupations are obvious and in most cases are confirmed by identified features and radiocarbon dates. Although no Early Gulf Formational (Broken Pumpkin Creek phase) features were identified, the recovery of 110 fiber tempered sherds indicates continuity of occupation from Late Archaic. Significant quantities of Late Gulf Formational (Henson

Springs phase) ceramics and features indicate that the first intensive Woodland occupation occurred during that culture's existence in the first millineum B.C. Furrs Cordmarked and Mulberry Creek Cordmarked ceramics in association with exotic trade materials from chronologically defined cultures in other areas indicates that the site was occupied at least during the Late Miller II and Early Miller III periods within Middle and Late Woodland times. Finally, the shell tempered ceramics in conjunction with the Kellogg radiocarbon dates from features indicate that the Mississippian occupation was confined to the Moundville I period, which is identified as having spanned the years between about A.D. 1000 and A.D. 1250 (Steponaitis 1978).

Shell and Bone Artifacts

A variety of shell and bone artifacts were recovered from the Kellogg site. The shell artifacts include gorgets, pendants, shell dippers, drilled and utilized mussel shells, and several types of beads. Most of the shell artifacts were associated with Mississippian burials. The bone artifacts, including awls, antler tines, a gouge, a projectile point, and a bead fragment, were primarily in association with Miller III and Mississippian features (see Table 9).

Cut Shell Gorgets (4 specimens)

The gorgets, apparently cut from the walls of whelk shells (Busycon sp.), were with adult Mississippian burials 12, 21, 34, and 36. Three specimens are engraved and the fourth displays cut-outs. Such gorgets can provide information on social stratification and beliefs as well as supply data on the temporal and geographic context of a given site. Publications by Kneberg (1959), Waring and Holder (1945), and Fundaburk and Foreman (1957) demonstrate that certain motifs are universal within the Mississippian sphere of influence while others are localized. Kneberg has also demonstrated that motifs changed through time and based on her work, the Kellogg gorget motifs appear to be typical of those which represent the "early and most elaborate expression of the Southern Cult" (Kneberg 1959:39). The

Table 9. Shell and Bone Artifacts

Artifact	Provenience																							
	B2	B3	B6	B7	B8	B9	B11	B12	B18	B21	B34	B36	F16	F44	F84	F123	Surface	199N 206EL3	197N 209EL4	197N 206EL5	198N 209EL8	198N 209EL9	196N 209EL2	Total
Shell																								
Engraved gorgets										1	1	1												3
Excised gorgets								1																1
Marine cylin. beads	467																				1	1		469
Marine disc beads		327																						327
Goniobasis beads			1																1					2
Mussel disc beads							1																	1
Mussel pendants														1						1				2
Whelk "dippers"												2												2
Small drilled mussel shells														1	2									3
Large drilled mussel shells													1		1		1	1						4
Bone																								
Awls				1	1										1								1	4
Gouge															1									1
Ground antler						1																		1
Antler tines												5												5
Projectile point									1															1
Bead																1								1

four gorgets exhibit such designs as the cross, the sun circle, the barred oval, and the four-armed swirl, or swastika.

Specimen 1 (Plate 34d). This disc-shaped gorget, found under the mandible of Burial 12, has a design consisting of a cross formed by four triangular shaped cut-outs. Two small drilled holes are located above one arm of the cross. Neither hole displays evidence of cord wear, an indication that the gorget was seldom or never worn before the death of the individual. The specimen is 58 mm in diameter and 2.5 mm in thickness. Identical gorgets were found interred with partially flexed burials at the Little Bear Creek site (Webb and DeJarnette 1948:25, 45) and at the Mulberry Creek site (Webb and DeJarnette 1942:247, Plate 288), both of which were located on the Tennessee River in Colbert County, Alabama.

Specimen 2 (Plate 34c; Figure 14b). This oval gorget was found under the mandible of Burial 21. Two poorly engraved lines encircle the perimeter and a poorly defined and crudely engraved cross is located in the center. Surrounding the cross are numerous un-patterned scratches and several lightly engraved lines extend from the vertical line of the cross at a 90^{o} angle. Two triangular-shaped engravings touch the inner line which circles the edge of the gorget. Above the vertical arm of the cross are two small drilled holes, 9 mm apart, that exhibit extensive cord wear. The wear pattern on the front runs horizontally from one hole to the other while the wear pattern on the back side runs vertically from each hole to the edge of the gorget.

Specimen 3 (Plate 34b; Figure 14c). This gorget, associated with Burial 34, is the largest and most elaborately engraved of the four. The design consists of several motifs. The outermost engraving is a series of cross hatches and four equally spaced paired S-shaped motifs. On the interior are two more circles connected by short perpendicular lines which form 12 compartments. Within this circle is a sun circle followed by two more circles connected by short perpendicular lines which form four compartments. Within this motif is one more circle that isolates an excised four-armed swirl, or swastika. Near the edge of the gorget are four small drilled holes, none of which exhibit any

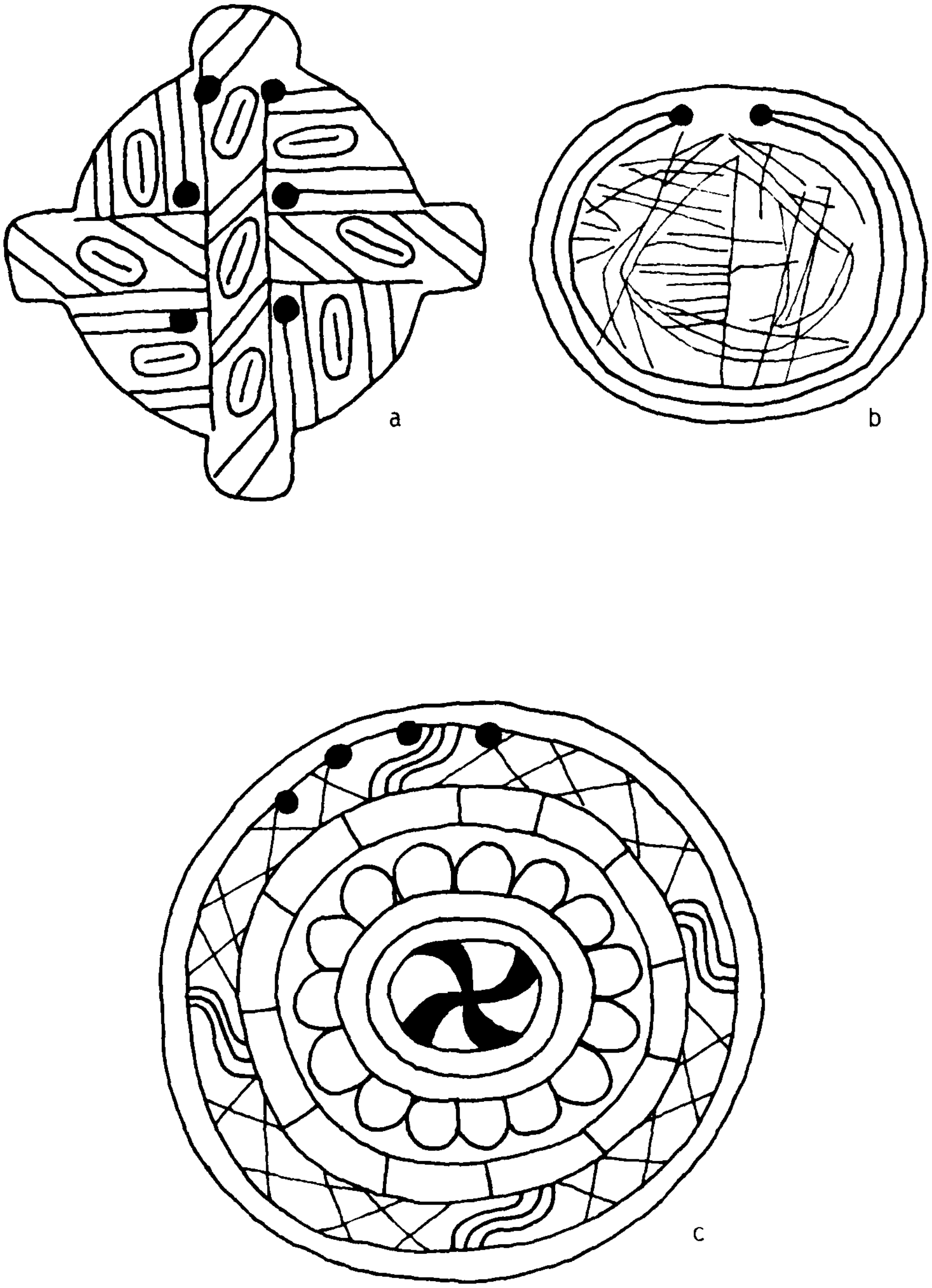


Figure 14. Engraved shell gorgets: a, Specimen 4; b, Specimen 2; c, Specimen 3 (all actual size)

wear. The gorget is 89 mm in diameter and 6 mm thick at the center.

Specimen 4 (Plate 34a; Figure 14a). This disk-shaped gorget, found on the sternum area of Burial 36, has a central cross design with arms that extend 8 to 10 mm beyond the edge of the disc. The engraved cross is formed by the intersection of two horizontal parallel lines with two vertical parallel lines. Within the vertical portion of the cross are three diagonally oriented "barred ovals" all of which are bordered on each side by two diagonal parallel lines. The central cross divides the face of the gorget into four compartments, each of which contains a barred oval bordered on each side by two diagonal parallel lines. Each compartment also contains one drilled hole. Two other drilled holes are located at the top of the vertical portion of the cross near the edge of the gorget. No wear is evident on any of the holes. The gorget is 71 mm in diameter and 4.5 mm in thickness.

The motif on this gorget appears to be one of the more common in the general area. An identical gorget was found at the Perry Site in Lauderdale County, Alabama (Webb and DeJarnette 1948:43) and another was found with a burial in Oktibbeha County, Mississippi (Atkinson 1979:64, Figure 9). In addition a very similar gorget was found at the Mulberry Creek site in Colbert County, Alabama, in association with the gorget identical to Specimen 1, discussed above (Webb and DeJarnette 1942:247, Plate 288). This gorget differed only in that it possessed four triangular cut-outs in the corners of the cross.

Shell Pendants (2 specimens)

Two fragments of irregularly-shaped drilled mussel shell pendants were recovered. Both specimens exhibit grinding along the edges. One pendant (Plate 35h) was found in Feature 44, a Late Miller II pit, and the other (Plate 35i) was found in Level 5 of Square 197N206E. The latter might have been associated with the Late Archaic occupation or the artifact may have been intrusive from the Woodland or Mississippian deposit above.

Shell Beads (799 specimens)

Tubular Beads (Plate 35a). These small, biconically drilled

beads were made from marine shells. Two such beads were found in Levels 8 and 9 of Square 198N209E and 467 specimens were found in the neck area of Burial 2, a juvenile of the Mississippian population. They range in diameter from 4 to 6 mm and vary in length from 5.5 to 11 mm. The beads with Burial 2 appeared to have been strung on several separate cords or on a single cord wrapped repeatedly around the neck.

Disc Beads (Plate 35b). Three hundred twenty-seven small biconically drilled disc beads, probably cut from whelk or conch shells, were found in the neck area of Burial 3, a Mississippian juvenile next to Burial 2. These beads range between 4.5 and 6.5 mm in diameter and thicknesses vary between 1.5 and 4 mm. A single disc bead (Plate 35c) cut from a mussel shell was associated with Burial 11, a Mississippian infant. The bead is 12 mm in diameter and 7 mm in thickness.

Goniobasis Shell Beads (2 specimens). Two beads, made of marine shells of the genera Goniobasis, were recovered in separate locations with indefinite cultural affiliations. One (Plate 35f) was found in Level 4 of Square 197N209E and the other (Plate 35e) was loose in the fill of Burial 6, a juvenile of the Mississippian population. The shells were converted to beads by grinding a hole in each near the operculum cavities. Such beads were probably sewn on to fabric materials. Many beads of this type were found in the neck area of a Mississippian child burial at the Tibbee Creek site, located 2 km south of Kellogg (O'Hear et al. 1979:203).

Shell Dippers (2 specimens)

These lightning whelk (Busycon contrarium) shell dippers, or bowls, were found with Burial 36 (Plate 48). They were made by enlarging the natural cavity of the shell by cutting away part of the shell wall and the interior columnella to form a triangular shaped vessel. The larger of the two dippers measures 310 mm in length and 160 mm in width while the smaller one measures 232 mm in length and 138 mm in width. The smaller dipper displays a small drilled hole (10 mm in diameter) on the terminal whorl, the apparent purpose of which was to aid in extraction of the animal (Larson 1980:74). The larger dipper

contained five antler tines, a circumstance similar to that in Burial 23 at the Koger's Island site (1Lu92) in Lauderdale County, Alabama; in that Mississippian burial were found two shell dippers, the larger of which contained four antler tines (Webb and DeJarnette 192:219).

Drilled Mussel Shells (7 specimens)

Two types of drilled mussel shells were recovered. The first type (Plate 36c) includes medium small shells 45-50 mm in length with drilled holes 5-10 mm in diameter placed in the center. These shells exhibit no wear on the edges and may have been pendants or possibly, unused hafted scrapers. The other types (Plate 36a, b) is large in size (50 or more mm in length) and have drilled holes 10-25 mm in diameter. These shells exhibit step fracturing and wear along the edges as well as within the hole. This type of artifact, often referred to as a "hoe" or "hafted scraper," has been found at numerous Late Woodland and Mississippian sites such as Hiwassee Island (Lewis and Kneberg 1946), several sites in the Tellico Reservoir (Salo 1969; Schroedl 1975), sites in the Nickajack Basin (Faulkner and Graham 1965), and sites in the Pickwick Basin (Webb and DeJarnette 1948). In the Tombigbee Valley drilled mussell shells have been recovered from Late Miller II and Miller III features and from general Woodland occupation levels (Nielsen and Jenkins 1973; Atkinson 1974). At Kellogg three specimens were found in Miller III pits and one in a Late Miller II pit (Feature 44). The cultural affiliations of the other two are uncertain but both were found in post-Archaic contexts. Experimental replication by members of the lab staff with a large mussel shell found in nearby Tibbee Creek demonstrated that such shells are indeed an adequate implement for weeding, chopping, or light digging.

Bone Awls (4 specimens)

These tools, ground on one end to produce a sharp point, were made from long bone fragments of birds or mammals. One splinter awl (Plate 37d), found in association with Burial 7, is completely ground and highly polished and has a cut groove around the blunt

proximal end. A second specimen (Plate 37a) made from a split deer matacarpus was found in Feature 84, a Miller III pit, and another (Plate 37f), made from the left ulna of a deer, was recovered from Level 2 of Square 196N209E. The fourth, found with Burial 8, was made from the tarso-metatarsus of a turkey. The awls from Kellogg range in length from 40.5 mm to 113.5 mm.

Bone Gouge (1 specimen)

This split bone tool (Plate 37d), which is 184 mm in length and 21 mm in width, was made from the tibia of a deer. The beveled bit displays heavy use wear on the edge and convex (bone surface) side, a wear pattern considered diagnostic of a gouging tool (see Winter 1969: 60). The tool may have been used as a flensing instrument but this is uncertain. It was found in Feature 84, a Miller III pit which contained a large quantity of animal bones and mussel shells.

Ground Antler (1 specimen)

Found resting on the right femur of Burial 9, this rectangular deer antler artifact (Plate 37b) is ground, forming four generally flattened sides. One end is rounded and the other is beveled and ground smooth, either intentionally or through use. The artifact is 59 mm in length and 11 mm in thickness. Its function is unknown but similar shaped bone objects from the Swan Island and Riverton sites are interpreted to be gaming pieces, or "tallies" (Winter 1969:84, Plate 39).

Antler Tines (5 specimens)

These antler tines were found in a large whelk shell dipper interred with Burial 36. None of the tines are worked or exhibit detectable wear. The lengths of the tines range from 33.5 to 81 mm and diameters range between 9 and 23.5 mm.

Bone Projectile Point (1 specimen)

This bone artifact (Plate 37e) is interpreted to be a projectile point rather than an awl because of the lack of wear on the distal end.

Its provenience just above the left humerus of Burial 18 could be an indication that the artifact was imbedded in the individual's arm at the time of death. The point is made from a bone splinter and measures 40 mm in length and 7 mm in width.

Bone Bead (1 specimen)

One bone bead fragment (Plate 35d) was recovered from Feature 123, a Miller III pit. The artifact is oval, 11 mm in length 9.5 mm in width, and has a drilled hole 5 mm in diameter.

Summary

The shell and bone artifacts recovered at Kellogg are not unusual for the Southeast but they have provided deeper insight into the technologies of some of the cultures which inhabited the Central and Upper Tombigbee Valley. Since wooden artifacts generally perish in the soil, items made of shell and bone provide a more comprehensive view of the articles manufactured from non-lithic materials. Both utilitarian and ornamental bone and shell artifacts are represented. Most of the bone artifacts, such as projectile points, awls, antler tines (potential flakers), and gouges are utilitarian in nature while the one bead represents ornamental use of bone. In contrast to the predominance of utilitarian items of bone, most of the shell artifacts are ornamental with the exception of the mussel shell hoes, or hafted scrapers. The ornamental shell artifacts consist of beads, mussel shell pendants, shell gorgets, and shell dippers. Although the name "dipper" seems to imply a utilitarian function, socio-technic implications are apparent for these artifacts in that they were made from exotic and therefore highly prized whelk shells obtained from the Gulf Coast. Such shells, therefore, are considered to be an indicator of high socio-economic status for the individuals with which they were buried (see Brown 1971: 101; Larson 1971:63). Of the shell and bone artifacts recovered, the shell gorgets are the main items that have provided a combination of temporal, spatial, religious, and socio/economic data. The motifs engraved or cut upon these gorgets indicate the following in regard to the Mississippian people who used the Kellogg site: (1) The site was

occupied during the early expression of the Southern Cult by a people under the Moundville sphere of influence. This early mature Mississippian temporal period is supported at Kellogg by ceramic types typical of Moundville I (Stephonitis 1978:4-5) and by two late twelfth century radiocarbon dates (see radiocarbon dates discussion below). (2) The scarcity of the gorgets as burial goods, the exotic nature of the raw material (marine shells, probably from the Gulf), and the workmanship often displayed indicate that those individuals buried with them possessed either great wealth, leadership position, or a significant religious office; combinations of these are quite possible, if not probable. (3) the fact that three of the four gorgets show no evidence of wear indicates that such items may have been symbols placed with the deceased as testimony to the individual's high religious, social, or economic status. Such a theory implies that the gorget's main function was that of a religious funerary object. The absence of cord wear, however, could mean that the gorgets were only worn on rare special occasions and such limited use might have left no detectable evidence of cord wear.

VI. BURIALS AND OTHER FEATURES

Burials

The 42 burials investigated at the Kellogg site were subjected to two different types of excavation. Burials 1 through 23 and Burial 41 were discovered either during the general block excavations or during shallow stripping with a road grader. These burial pits, therefore, were usually detected before the bones were encountered and careful excavation ensued. Burials 24-40 and Burial 42, however, were discovered on the last day of the excavations when a large earth mover was used to remove the midden along Grader Cut 1 in an effort to more fully investigate the lowest levels of the Archaic deposit. As shown on Figure 5, the deep stripping did not exactly follow the original grader cut; instead it was offset about 1 m to the west on the north end. The deep stripping was intentionally conducted further to the west in a last minute effort to open up a little more of that part of the site before excavations had to be terminated. Fortunately or unfortunately, depending upon the way the situation is viewed, this move resulted in the discovery of additional burials. As a result, most of them were damaged by the earth mover blade and since time did not allow careful excavation most were very hurriedly investigated by determining the burial position, approximate provenience, and by removing at least the major bones that had survived the stripping process. The locations of these burials were recorded by taking tape measurement readings at the approximate center of each skeleton; only in rare cases (discussed below) were detailed drawings of the pits and skeletons made. As a result the shapes and proveniences of the pits for Burials 24-40 as depicted on Figure 5 are close approximations, with the exception of Burials 36 and 39 which were more accurately plotted (see further elaboration below). Also in regard to Burials 24-40 the exact positions of the arms of the extended skeletons often were not determined. On Figure 5, therefore, these extended skeletons are depicted with the arms by the sides unless other positions were

determined. In several cases the inferior portions of some skeletons lay outside the stripped area and thus were not uncovered by the earth mover. Usually no effort was made to expose all the distal parts of these skeletons but hurried dirt removal into the strip walls with hand tools was conducted to determine whether or not the legs were extended by partially uncovering the bones to at least as far as the mid-femur. Burial 36, one of the deepest encountered in the deep stripping operation, lay below the Archaic deposit zone and was not damaged because the stripping was terminated just above the bones. The burial pit showed distinctly in the lighter clay at that depth (ca. 1 m) so the skeleton was excavated in its entirety by hand, but not as completely as would have been the case if more time had been available. Burial 39, a small child in a relatively shallow pit, was also completely excavated following the termination of the stripping after it was determined that 90% of the skeleton lay outside the strip and had not been disturbed by the earth mover; the skull, however, had been removed by the earth mover.

With the possible exception of Burial 13, which consisted of part of a cranium in the Archaic zone, and disarticulated infant bones (Burial 42) in the pit with Burial 36, all the skeletons appeared to have been primary interments. Burial 11, an infant, was in such poor condition that a definite determination could not be made in regard to type of interment, but it appeared to be primary and flexed. Burial 19, an Archaic cremation at the base of the midden, was the only interment of that type.

Although the cultural affiliation of a few of the skeletons encountered during the deep stripping is indefinite, most of the burials were members of the Mississippian population and the pits originated in the disturbed upper 20 cm of the deposit. Definite exceptions are Burials 13 and 19; the burial pits in these cases originated in the Archaic zone. A second possible exception is Burial 41, which was a flexed skeleton that was greatly damaged by the road grader. This burial lay somewhat isolated from the main cemetary area and might possibly be of Woodland affiliation. However, as all the known

Mississippian burials were oriented with the heads toward or generally toward the east, Burial 41, which was also oriented in that direction, was probably Mississippian.

The Mississippian cemetary at the Kellogg site appears to have primarily consisted of at least four separate clusters of burials (see Figure 5). However, it is possible that undiscovered burials existed in the area between the Block 1 burials (Burials 1-3 and 23) and the cluster located to the south, for the area between the excavation blocks was not stripped deep enough to definitely reveal the presence or absence of burial pits. Of course, other undetected burials may have been present on the extreme east and west sides of the site where no investigations were conducted. As mentioned above, all three of the 2 x 2 units excavated during the 1974 testing were placed on the north half of the site and no burials were encountered (Blakeman 1975). This area was not intensively investigated during the major excavation but no burials were observed in Grader Strip 1, which was extended to the edge of the road on that part of the site (Figure 5).

The Mississippian burials are typical of that cultural tradition in that burial pits were often placed side-by-side and most of the skeletons lay extended on the back. As mentioned above, all of the definite Mississippian burials were oriented with the heads toward or generally toward the east.

In the individual burial descriptions and tables below, age and sex data have been taken from Appendix A, the skeletal analysis report. Pathology and stature data also will be found in that report and detailed grave good descriptions are presented above in the artifact section and below in the individual burial discussions and Table 10.

Burial 1

Burial 1 (Plate 38) was encountered by the backhoe during the isolation of Block 1. The grave, a long, well-defined, oval pit was 213 cm in length, 75 cm in width, and extended to a depth of 70 cm below surface. The skeleton was that of a 21 year-old female interred in an extended and supine position. The skull was oriented toward the ENE and lay on the right side facing NW. The arms were extended along

TABLE 10. BURIAL DATA

BURIAL #	CULTURAL AFFILIATION	AGE	SEX	POSITION	ORIENTATION	GRAVE GOODS
1	Miss.	21	F	supine & extended; arms extended by the sides	ENE	1 Miss. Plain, var. Warrior complete jar
2	Miss.	10	?	supine & extended; arms extended by the sides	ENE	467 cut cylindrical beads in neck area
3	Miss.	4-6	?	supine & extended; arms extended by the sides; left arm under pelvis	ENE	327 cut disc beads in neck area
4	Miss.	Adult	F?	supine & semi-flexed	ESE	
5	Miss.	25-29	M?	supine & extended; arms extended, hands on pelvis	ENE	1 Miss. Plain, var. Warrior body sherd
6	Miss.	8-10	?	supine & extended; arms extended; hands under pelvis	ENE	2 deer radii on right shoulder; 1 Moundville Incised, var. Carrolton partial vessel
7	Miss.	45-50	M?	supine & extended; arms extended; left hand under pelvis & left femur, right hand on pelvis; ankles crossed; burial probably bound	ENE	1 bone awl; 1 Miss. Plain, var. Warrior complete jar; 5 Madison points; 2 greenstone celts
8	Miss.	20-25	F	fully flexed on right side. Left arm semi-flexed; right arm flexed	ENE	1 bone awl; 1 sandstone abraider
9	Miss.	25	F	supine & extended; arms extended; hands on pelvis; burial probably bound	ENE	1 ground deer antler artifact
10	Miss.	32-38	F	semi-flexed on right side	ENE	
11	Miss.	infant	?	flexed?	ENE?	
12	Miss.	50	M	supine & flexed; arms crossed on right side of the chest; legs drawn up along side the trunk	ENE	1 excised shell gorget
13	Archaic	25?	F?	flexed?	?	
14	Miss.	16-20	F	supine & semi-flexed; lower legs bent back near pelvis	ENE	1 Miss. Plain body sherd under skull
15	Miss.	Adult	F?	supine & extended; arms extended, right hand on pelvis, left hand by the side	ESE	
16	Miss.	18-22	F?	supine & extended; arms extended, right hand under pelvis, left hand along the side	ESE	

TABLE 10. Continued

BURIAL #	CULTURAL AFFILIA-TION	AGE	SEX	POSITION	ORIENTATION	GRAVE GOODS
17	Miss.	34-40	M	supine & extended; right arm folded across abdomen, left arm folded across chest	ENE	
18	Miss.	25-30	M	supine & extended; arms extended; lower arms and hands under pelvis	E	1 bone point
19	Archaic	sub-adult	?	(cremation)		1 siltstone gorget; 1 bannerstone
20	Miss.	20	M	supine & extended; arms extended along sides	ENE	1 Moundville incised, var. Carrolton partial vessel
21	Miss.	33-37	M	supine & extended; arms extended by the sides with the palms down	ENE	1 engraved shell gorget
22	Miss.	20-21	M	supine & extended; arms extended along the sides	ENE	
23	Miss.	28-39	M	supine & extended; arms extended along the sides	ENE	1 ground sandstone palette
24	Miss.?	2-3	?	?	E	
25	Miss.?	3-4	?	?	?	
26	Miss.	28-32	M	extended?	E	
27	Miss.?	infant	?	?	?	
28	Miss.	10-12	?	supine & extended	ENE	
29	Miss.	2-3	?	?	E	1 partial plate-like Mississippian vessel with interior rim incising
30	Miss?	1-2	?	?	?	
31	Miss.?	infant	?	?	?	
32	Miss.	31-39	F?	supine & extended	ESE	
33	Miss.	40-50	F	supine & extended	E	
34	Miss.	30-40	F	supine & extended	E	1 engraved shell gorget
35	Miss.	adult	?	supine & extended	ENE	
36	Miss.	31-39	M	supine & extended; arms extended along the sides	E	1 engraved shell gorget; 2 whelk shell "dippers"; 5 antler tines
37	Miss.	35-40	?	supine & extended	ENE	
38	Miss.	adult	?	supine & extended	ENE	
39	Miss.	3-4	?	supine & extended; legs bent slightly at the knees	ENE	
40	Miss.	36-44	F?	supine & extended?	E	
41	Probably Miss.	young adult	?	semi-flexed on left side	E	
42	Miss.	infant	?	disarticulated bones accompanying Burial 36		

the individual's sides; the left hand lay under the left femur and the pelvis. In situ the skeleton measured 180 cm in length. Bone preservation was good, but due to the action of the backhoe, the feet, mandible, right clavicle, scapula, humerus, and ribs were damaged. Interred with the burial was a complete Mississippi Plain, variety Warrior jar (Plate 27). The vessel lay on its side near the top of the skull.

Burial 2

Burial 2 (Plate 39) was discovered during the excavation of Block 1. The grave was first recognized as a well-defined oval pit, the east end of which had been disturbed during the isolation of Block 1. The length of the pit was estimated to be 145 cm and the width was 42 cm; the maximum depth was 80 cm below surface. The skeleton was that of a child about 10 years of age. It was interred in an extended and supine position with the arms extended along the sides. The skull was oriented toward the ENE and faced to the WSW. The maximum length of the skeleton in situ was 117 cm. The skeleton was complete and bone preservation was good; minor root disturbance had resulted in a broken right femur. A total of 467 marine shell tubular beads (Plate 35) were around the neck of the skeleton (see bead discussion above).

Burial 3

Burial 3 (Plate 40) was discovered during the excavation of Block 1. The pit, detected at 25 cm below the surface, was 107 cm in length and 47 cm in width. The skeleton was that of a child interred in a supine and extended position with the legs bent slightly at the knees. The left arm was extended and the hand rested under the pelvis. The right arm was also extended along the individual's side. The skeleton lay at a depth of 65 cm below the surface and was oriented toward the ENE. Bone preservation was good and the entire skeleton was present; a root or ground pressure, however, had caused the anterior portion of the skull to shift away from the occipital. In situ the skeleton measured 100 cm in length. Around the neck of the skeleton were 327 marine shell disc beads (see bead discussion above).

Burial 4

Burial 4 (no plate) was uncovered during the stripping of Grader

Cut 1. The grave, an oval-shaped pit about 126 cm in length and 55 cm in width, was heavily damaged by the action of the road grader blade. The skeleton was that of an adult of undetermined age interred in a supine and semi-flexed position. Because of the grader blade damage, less than half of the dentition and cranium were present and slightly more than half of the pelvis and long bones were intact. The skeleton in situ was 122 cm in length. The bottom of the grave was approximately 45 cm below the surface. The skull was oriented toward the ESE.

Burial 5

Burial 5 (no plate) was encountered by the backhoe during the isolation of Block 2. The large, well-defined, oval pit was about 190 cm in length, 90 cm in width, and extended to 31 cm below the surface. The skeleton was possibly that of a male; the age at death was about 29 years. The skeleton lay in a supine and extended position with the arms extended and the hands resting on the pelvis. The skeleton was oriented toward the ENE and the skull faced NW. In situ the skeleton was about 140 cm in length. Bone preservation was good, but the feet and lower legs were damaged by the backhoe; otherwise, the majority of the bones, including the cramium, dentition, pelvis, and most of the major long bones were intact. A large Mississippi Plain body sherd (13 x 8 cm) lay about 6 cm to the southeast of the skull. The sherd was on the bottom of the pit and appears to have been intentionally placed there as a grave offering.

Burial 6

Burial 6 was found while isolating Block 2. The shallow, oval pit was about 140 cm in length and 65 cm in width; the maximum depth was about 35 cm below the surface. The skeleton was that of an eight to ten year old child placed in a supine and extended position. The arms were extended and the hands lay under the pelvis. The skull was oriented toward the ENE and faced SSW. The bone preservation was good, but the backhoe damaged the feet and lower legs. In situ the skeleton was 115 cm in length. Two deer radii lay on the right humerus and ribs, and a large (25 x 33 cm) rim sherd from a Moundville Incised, variety Carrolton vessel (Plate 30) was positioned just northeast of

the skull.

Burial 7

Burial 7 (Figure 15) was also encountered while isolating Block 2. The extremely large, oval pit was 220 cm in length, 110 cm in width, and about 40 cm deep. The skeleton was that of a 45 to 50 year old individual interred in a supine and extended position with the legs crossed at the ankles. The arms were extended along the sides; the left hand lay under the left femur and the pelvis and the right hand rested on the pelvis. The skull was oriented toward the ENE. The constriction of the skeleton indicated that the individual had probably been tightly wrapped in some type of binding. It was 170 cm in length and 35 cm in width at the shoulders. Bone preservation was good but minor bioturbation was noted. Associated with the skeleton were a small Mississippi Plain globular jar (Plate 28), two greenstone celts (Plate 17), five Madison points (Plate 9a-e), and one bone awl (Plate 37d). Three of the points lay together 10 cm north of the skull and the two other points, one of the celts and the bone awl were together 7 cm north of the right humerus. The second celt rested on the right radius and ulna just below the elbow and the jar was located 10 cm northeast of the skull. This individual is interpreted to be a probable male; the nature of the grave goods present tend to support a male sex classification.

Burials 8 and 10 (Multiple interment)

Burials 8 and 10, both Mississippian, were encountered while stripping Grader Cut 1. The oval-shaped pit was 150 cm long and 74 cm wide.

Burial 8 (Plate 42), a 20 to 25 year old female, was interred in the east end of the pit in a fully flexed position and lay on its right side. The skeleton was oriented toward the ENE and the skull faced north. The left arm was flexed with the hand clenched and close to the right knee; the right arm was semi-flexed. The skeleton *in situ* was 100 cm in length and rested at a depth of 35 cm below the surface. Bone preservation was good, disturbances were minimal, and the skeleton was complete. A turkey bone awl and a sandstone abraider were located

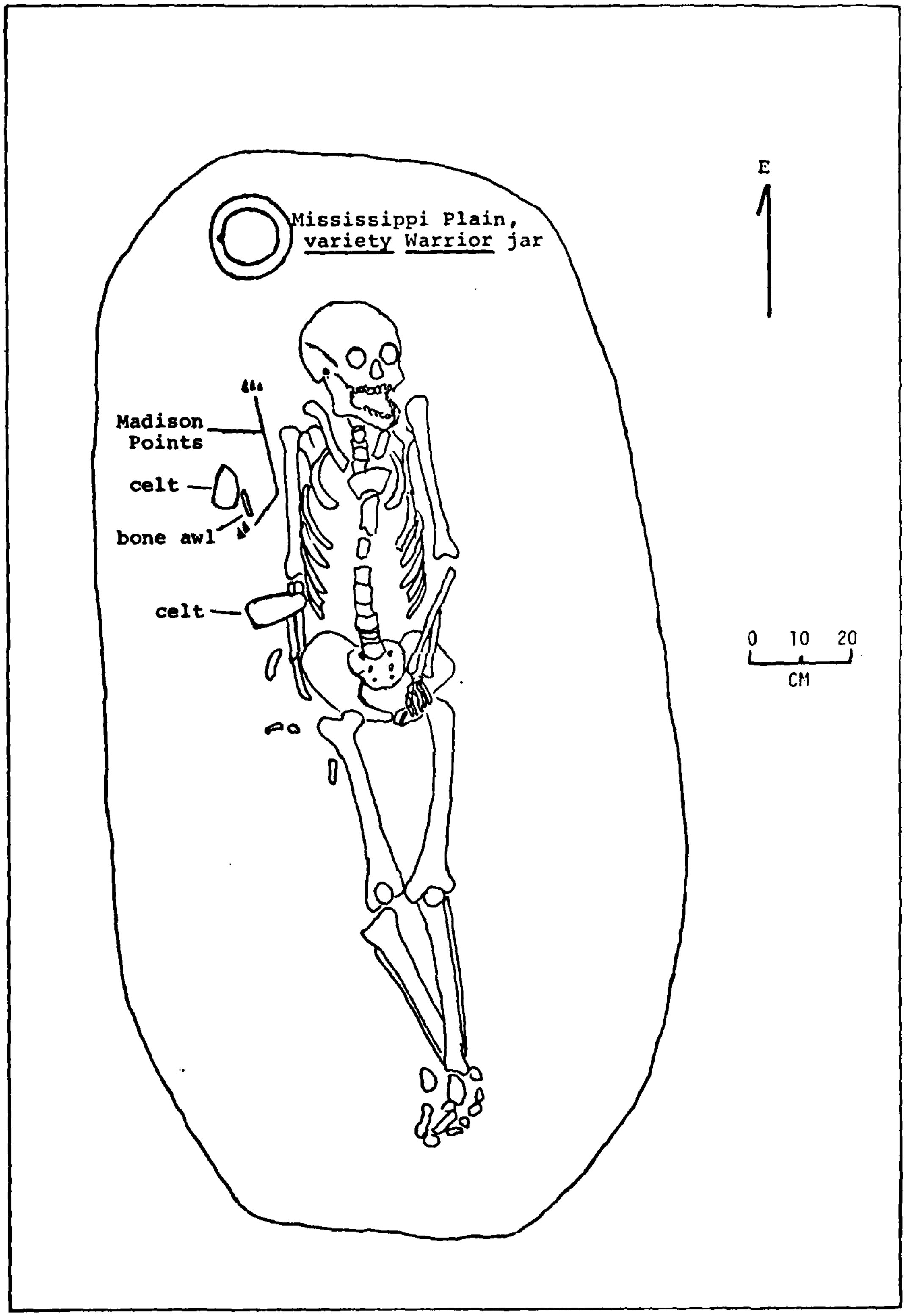


Figure 15. Burial 7

about 20 cm east of the skull but intentional placement with the burial is uncertain.

Burial 10 (Plate 43), which partially rested underneath Burial 8, was a 32 to 38 year old female. The skeleton lay in a semi-flexed position on its right side with the skull oriented toward the ENE and facing upward. The skeleton *in situ* was 90.5 cm in length and rested at a depth of 45 cm below the surface. Bone preservation was good and the skeleton was complete and undisturbed.

Burial 10 was not detected until most of Burial 8 had been removed. The skull and pectoral section of Burial 10 underlay the flexed legs of Burial 8 and occupied the west end of the pit.

Burial 9

Burial 9 (no plate) was uncovered while stripping Grader Cut 1. The large, oval pit was 235 cm in length and 110 cm in width. The individual was a female about 25 years of age interred in a supine and extended position. The arms were extended and the hands rested on the pelvis. The skull was oriented toward the ENE and faced upward. The constriction of the skeleton indicated that the individual had been wrap bound. The skeleton was 160 cm in length and 30 cm in width at the shoulders. Bone preservation was good, but bioturbation and the action of the road grader caused some damage to the hands and legs. A ground antler artifact (Plate 37b) was situated above the right femur but intentional placement with the body is uncertain.

Burial 11

Burial 11 (no plate) was encountered while stripping Grader Cut 2. The pit, badly damaged by plowing and bioturbation, could not be clearly defined. The skeleton, that of an infant, was in poor condition and the burial position could not be ascertained with confidence; it appeared to have been flexed, however, with the skull oriented toward the ENE. Underneath the skull was a small Mississippi Plain body sherd but intentional interment with the burial is uncertain. A single shell disc bead was found in the neck area (Plate 35c; see bead discussion above).

Burial 12

Burial 12 (Plate 44) was encountered while stripping Grader Cut 1. The grave was an oval pit 128 cm in length (E-W), 82 cm in width, and 48 cm in depth. The skeleton, complete and well-preserved, was 95 cm in length. The approximately 50-year-old male was placed in a flexed position on the back. The skull was oriented toward the ENE and faced north. The arms were crossed on the right side of the chest and the legs were drawn up alongside the trunk. A marine shell gorget (Plate 34d) with cut-outs was found on the upper chest and underneath the mandible (see gorget discussion above).

Burial 13

Burial 13 (no plate) was located in Block 2. It was first recognized as a slightly darker stain 68 cm below the surface in Zone 2. The circular pit was 68 cm in length (E-W) and 44 cm in width. Bone preservation was extremely poor and little remained other than the mandible, part of the maxilla, and fragments of teeth. The bones were that of an approximately 25-year-old individual, possibly a female. The provenience of the burial pit in Zone 2 indicates an Archaic association.

Burial 14

Burial 14 (Plate 45) was discovered while stripping Grader Cut 5. The shallow, oval pit was 139 cm in length, 62 cm in width, and the bottom was about 30 cm below the surface. The individual was a 16 to 20 year old female interred in a supine and semi-flexed position with the head oriented ENE; the skull was on its left side facing south. The lower legs were bent back close to the pelvis and the knees were pointed toward the southwest. The right arm was extended along the right side and the hand touched the feet; the left arm was tightly flexed and the left hand rested near the skull. Bone preservation was fair but the skeleton, severely damaged by the grader blade, was not complete. The skeleton *in situ* was 107 cm in length. Underneath the neck area was a large Mississippi Plain sherd (17.5 x 14 cm).

Burial 15

Burial 15 (no plate) was encountered during the stripping of Grader Cut 3. The skeleton was about 20 cm below the surface and was

severely disturbed by cultivation; the pit dimensions could not be ascertained. The individual was an adult placed in a supine and extended position, and was oriented toward the ENE. The arms were extended with the right hand resting on the pelvis and the left hand along the side. Because of the disturbance by cultivation only the inferior half of the skeleton was present, except for a few vertebral fragments.

Burial 16

Burial 16 (no plate) was encountered in Grader Cut 5. The shallow, oval-shaped pit was 184 cm in length (E-W) and 83 cm in width. The burial was an 18 to 22 year old adult placed in a supine and extended position with the skull oriented toward the ESE and facing SSW. The arms were extended with the right hand under the pelvis and the left hand resting along the side. The skeleton *in situ* was 152 cm in length and rested at a depth of 25 cm below the surface. Bone preservation was poor and the skeleton was damaged by plowing and bioturbation.

Burial 17

Burial 17 (Plate 46) was also exposed by the stripping. The long, oval-shaped pit was 206 cm in length, 68 cm in width, and extended to about 60 cm below the surface. The individual was a 34 to 40 year old male interred in an extended and supine position. The skull was oriented toward the ENE and faced NNW. The right arm was folded across the abdomen and the left arm was folded across the chest; the left hand lay directly in front of the face. The skeleton *in situ* was 166 cm in length and 32 cm in width at the shoulders. It appears to have been wrap bound. Bone preservation was good and the skeleton was complete.

Burial 18

Burial 18 (no plate) was encountered while stripping Grader Cut 5. The long, oval pit measured 210 cm in length, 55 cm in width, and the bottom was approximately 50 cm below the surface. The burial was a 25 to 30 year old male interred in a supine and extended position with the skull oriented toward the east and facing north. The arms were extended; the hands and lower arms were under the pelvis. The skeleton *in situ* was 176 cm in length. Bone preservation was good and the skeleton was complete. A bone artifact interpreted to be a projectile point (Plate 37e) was found above the left humerus; it may have been imbedded

in the arm at the time of death.

Burial 19

This human cremation was originally designated Feature 26 because the pit fill contained a very large quantity of small burned bone fragments that could not be identified in the field (no teeth in an identifiable state of preservation were present). Subsequent examination of the fragments in the lab however, revealed the presence of definite human bone, in particular most of a right hamate. The size of the hamate indicates a sub-adult. As the Burial 19 number had been inadvertently skipped as the burials were encountered, that number was assigned in the lab to the cremation.

The top of the Burial 19 pit was observed in the bottom of the backhoe trench in the sterile yellow-brown clay. The initial appearance of the pit in the light soil was that of a dark circular ring which extended on one side into the isolated block and on the other side into the outside wall of the trench. Subsequent excavation revealed that the top of the pit fill was slightly concave, thereby accounting for the light soil in the center which produced the initial ring-like appearance. The basin-shaped pit, 102 cm in diameter and 30 cm in depth, originated near the base of Zone 2, at approximately 100 cm below the surface. The fill, composed of a compact, black soil, was excavated with small hand tools; burned bone fragments and the larger pieces of the artifacts mentioned below were recovered. All the fill soil was waterscreened through window screen mesh, resulting in the recovery of additional numerous burned bone fragments and additional small fragments of lithic artifacts present. A sample of the fill was also subjected to flotation and other burned bone and a few pieces of the artifacts were recovered in the window screen in the bottom of the flotation tub.

Both the lithic artifacts present, a square ground and polished drilled gorget (Plate 18a) and a drilled bannerstone (Plate 17i), were fragmented by extreme heat. A large heat spall was present on one side of the gorget, resulting in a concavity on that side. Small pieces from this thermal explosion were found scattered in the fill. The bannerstone was extremely fragmented from thermal explosion and could not

be reconstructed (see artifact description section above for more detailed information on the artifacts).

Burial 19 appears to be affiliated with the first significant occupation on the Kellogg site. As the pit originated in a level that contained very little cultural material (Level 10; see Table 4), the site probably had not been utilized extensively before the cremation took place. So little charcoal was present in the fill of Burial 19 that a radiocarbon date could not be obtained, but Feature 34, a small pit located to the east and at the same depth yielded a radiocarbon date of 4,030±150 B.C. (see radiocarbon dates discussion below).

Burial 20

Burial 20 (no plate) was identified while stripping Grader Cut 5. The oval-shaped pit was 235 cm in length and 90 cm in width. The skeleton was that of a male about 20 years of age; it was placed in a supine and extended position and the skull was oriented toward the ENE facing upward. The arms were extended along the sides. The skeleton *in situ* was 190 cm in length and rested at a depth of 35 cm below the surface. The bone preservation was good and the skeleton was complete. Positioned east of the skull and obviously interred with the burial was a large portion of a Moundville Incised, *variety Carrolton* jar (Plate 31).

Burial 21

Burial 21 (no plate) was uncovered while stripping Grader Cut 5. The deep, oval pit was 200 cm in length and 70 cm in width. The skeleton was that of a 33 to 37 year old male placed in a supine and extended position. The skull was oriented toward the ENE and faced NW; the arms were extended along the sides with the palms down. The skeleton *in situ* was 165 cm in length and rested at a depth of 70 cm below the surface. Bone preservation was good and the skeleton was complete and undisturbed. An engraved marine shell gorget (Plate 34c) lay on the upper chest area and under the mandible (see gorget discussion above).

Burial 22

Burial 22 (no plate) was encountered while stripping Grader Cut 5. The skeleton was that of a 20 to 21 year old male interred in a supine and extended position. The skull was oriented toward the east and

faced NNW: the arms were extended along the sides. The skeleton in situ was 175 cm in length, 34 cm in width, and rested at a depth of 55 cm below the surface. The bone preservation was generally good but the hands and vertebral column were severely disturbed, probably by tree roots or rodents.

Burial 23

Burial 23 (no plate), discovered while isolating Block 1, lay primarily in the north wall of the trench. The deep pit extended to a depth of 96 cm below the surface. The skeleton was that of a 28 to 39 year old male interred in a supine and extended position. The skull was oriented toward the ENE and faced upward. The arms were extended along the sides. The skeleton in situ was 172 cm in length. Bone preservation was good and the skeleton had not been disturbed. Laying on the upper part of the chest and partly underneath the mandible was a ground ferruginous sandstone palette (Plate 18b).

Burial 24

Burial 24 was encountered and greatly damaged during deep stripping of Grader Cut 1. The skeleton, that of a two to three year old child was oriented toward the east. Little remained of the burial other than vertebral and rib fragments and some phalanges and teeth.

Burial 25

Burial 25, estimated to be that of a three or four year old child, was severely damaged by the earth mover during the deep stripping. The burial position and orientation could not be determined.

Burial 26

Burial 26 was almost completely removed by the earth mover during the deep stripping operation in Grader Cut 1. The skeleton was that of a 28 to 32 year old male oriented toward the east.

Burial 27

Burial 27, also greatly damaged by the earth mover while deep stripping Grader Cut 1, consisted of the remains of a one year old infant. Orientation and burial position could not be determined.

Burial 28

Burial 28 was encountered while deep stripping Grader Cut 1. The skeleton was that of a 10 to 12 year old child interred in a supine

and extended position with the skull oriented toward the ENE.

Burial 29

Burial 29 was encountered during deep stripping of Grader Cut 1. The individual, a small child two or three years of age, was in a supine and extended position. The skull was oriented toward the east. Positioned over the skull was a large (18 x 11 cm) shell tempered sherd (Plate 33) from an incised plate-like vessel (see ceramic discussion above). The grave partially intruded into Burial 34 but not deep enough to disturb the skeleton. Burial 29 is not shown on Figure 5 because the exact position of it in relation to Burial 34 was not determined.

Burial 30

Burial 30, an infant, was almost completely removed by the earth mover during the deep stripping operation in Grader Cut 1. Because of the extensive disturbance the burial position and orientation could not be determined.

Burial 31

Burial 31, an infant, was displaced by the earth mover while deep stripping Grader Cut 1. Thus the provenience and burial position were not determinable.

Burial 32

Burial 32 was encountered during the deep stripping operation in Grader Cut 1. The skeleton probably was that of a female; the individual was about 35 years of age. The body was interred in a supine and extended position with the skull oriented toward the ENE.

Burial 33

Burial 33 was discovered and badly damaged by the earth mover during the deep stripping of Grader Cut 1. The skeleton was that of a 40 to 50 year old female interred in a supine and extended position. The skull was oriented toward the east.

Burial 34

Burial 34, encountered while deep stripping Grader Cut 1, was partially disturbed by the earth mover. The skeleton was oriented toward the east and lay in a supine and extended position. An engraved

marine shell gorget (Plate 34b) was found in the throat area of this 30 to 40 year old female individual.

Burial 35

Burial 35 was severely damaged by the action of the scraper blade during the deep stripping operation in Grader Cut 1. The skeleton was that of an adult whose sex could not be determined. It was interred in a supine and extended position with the skull oriented toward the ENE.

Burials 36 and 42 (Multiple interment)

Burial 36 (Plate 48) was revealed by the deep stripping operation in Grader Cut 1. The skeleton was that of a 31 to 39 year old male interred in a supine and extended position. The skull was oriented toward the east and faced SSW; the arms were extended along the sides. Bone preservation was good and the skeleton was complete and undisturbed. The deep burial pit, which extended to ca. 1 m below surface, was detected in the sterile clay of Zone 3 after the deep stripping and was excavated on the last day of field work. Two complete whelk shell dippers (Plate 48) lay near the skull and an engraved marine shell gorget (Plate 34a) was found on the sternum. The largest whelk shell dipper contained five deer antler tines (see artifact discussion above).

Burial 42 consisted of the left ilium, right femur, and one foot phalange from a one year old infant. These bones were not detected in the field and were gathered from the grave along with the bones of Burial 36. The bones were later discovered in the lab and designated as Burial 42. Since the infant bones were found in a bag containing only Burial 36 cranium fragments and teeth, it is assumed that all bones in the bag were in close proximity to one another. In any case, Burial 42 apparently did not consist of a complete and articulated individual.

Burial 37

Burial 37, uncovered during the deep stripping of Grader Cut 1, was at a depth of 30 cm below the surface. The skeleton was that of a 35 to 40 year old adult placed in a supine and extended position. The

skull was oriented toward the ENE and faced upward. Bone preservation was poor and much of the skeleton was destroyed by the scraper blade.

Burial 38

Burial 38 was encountered 30 cm below the surface during the deep stripping of Grader Cut 1. Although the earth mover completely destroyed the skeleton, the individual was determined in the field to be that of an adult interred in an extended and supine position with the skull oriented toward the ENE.

Burial 39

Burial 39 (Plate 49), encountered while deep stripping Grader Cut 1, was about 35-40 cm below the surface. The skeleton was that of a two or three year old child placed in a supine and extended position with the legs bent slightly outward at the knees. The skeleton was oriented toward the ENE. Bone preservation was fair but the skull was removed by the scraper blade. The remainder of the skeleton lay outside the grader strip and was carefully excavated after termination of the stripping operation.

Burial 40

Burial 40, encountered while deep stripping Grader Cut 1, was approximately 90 cm below the surface. The skeleton was partially in the grader strip and only the skull and pectoral section were investigated. The 36 to 44 year old female appeared to have been interred in a supine and extended position with the head oriented toward the east.

Burial 41

Burial 41 was encountered and damaged during the stripping of Grader Cut 5. Bone preservation was poor and the shallow burial had been disturbed by plowing. The skeleton was that of a young adult interred in a semi-flexed position on the left side. The skull was oriented toward the east and faced SSE. The cultural association of this burial is uncertain, but the directional orientation indicates that it was Mississippian.

Conclusion

The investigations at the Kellogg site have produced valuable burial data on two cultural periods in the Tombigbee River Valley, the Archaic and the Mississippian. Although Archaic burials were poorly represented numerically the cremation found at the base of the midden has generated additional cultural data on this poorly defined period of occupation in the Upper and Central Tombigbee River Valley. At the nearby Vaughn Mound site (Atkinson 1974) and at the Barnes Mound site (Blakeman 1975) a number of primary, flexed burials were discovered in Middle to Late Archaic contexts but no cremations were found. In only one case, that of Burial 8 at the Vaughn Mound, were grave goods determined to be present. These goods consisted of an ornament made from the terminal whorl of a large marine shell and two large mussel shell valves placed upright near the skull (Atkinson 1974:147). These grave goods indicated that the Archaic inhabitants had developed both a reverence for the dead and religious belief in an afterlife. Burial 19 at Kellogg, which dates within the same millineum as those at the Vaughn Mound (5000-4000 B.C.), reinforces this speculation because of the ground and polished stone artifacts which were obviously with the body during the cremation.

Despite the new data generated by the Archaic cremation at Kellogg there is much yet to be learned about the Archaic inhabitants. Perhaps future archaeological research in the valley will produce answers to the following unknowns: (1) How prevalent was cremation as opposed to flesh burials? (2) Were some Archaic groups practicing only one disposition method of the dead rather than both? (3) If both methods were being practiced by a single population what factors determined the method employed? (4) Can cultural phases within the Archaic period be identified at least partially on the basis of burial practices? (5) When did sub-surface burial begin in the valley? (6) Was cremation with pit burial of remains practiced earlier than flesh burial? (7) What social and economic factors, if any, dictated the placement of grave goods with burials?

The Mississippian component investigations at Kellogg have also produced significanct data on burial customs and associated cultural traits. Collectively the cemetery burials investigated probably represent a valid sample of the population. That males and females of various ages are represented indicates first of all that the population consisted of nuclear family units, all of which may have been related. Some of the individuals in the cemetery, however, may not have been living at the site at the time of death. The site could have been utilized for burial by other Mississippian groups, some of which may have occupied the nearby Cofferdam, Tibbee Creek, or Shell Bluff sites.

Another cultural implication generated by the burial data from Kellogg (see Table 10) is that the social and economic systems were not egalitarian. This is implied by the presence and variability of non-perishable grave good inclusions with some burials and the absence of grave goods with others. As most of the last 20 skeletons were encountered by the machinery blade and often not carefully excavated, some grave goods inclusions may not have been recovered. With the exception of that from Burial 36, data from these last burials, therefore, are not comparable to that from the burials carefully excavated earlier and cannot be generally used in the following discussions. However, of the 22 burials carefully excavated, 16 possessed non-perishable goods and six lacked non-perishable grave goods. Of the former, Burials 8, 9, and 18 possessed only single bone or antler artifacts which may not have been intentional inclusions. Burials 1-3, 5-7, 11-12, 14, 20-21, 23, and 36 possessed definite grave goods of various types and the following artifact distribution patterns have been identified: (1) Shell beads were included with children and infants only (Burials 2, 3, and 11); (2) Whole vessels were buried with adults only (Burials 1 and 7); (3) Partial vessels or big sherds were buried primarily with individuals under the age of 20 years (Burials 6, 14, and 20); the exception is Burial 5, a 25-29 year old individual; (4) Marine shell gorgets were buried with adults only (Burials 12, 21, and 36); (5) Polished greenstone celts were buried with adults only (Burial 7); (6) Arrow points (probably originally with shafts) were buried with adults only

(Burial 7); (7) Bone and antler artifacts were present with adults only (Burials 7, 8, 9, 18, and 36); (8) Crude, ground sandstone palettes were buried with adults only (Burial 23); (9) Burials with grave goods were in 12 out of 16 cases extended on the back; the exceptions were Burial 8 (fully flexed; bone awl), Burial 11 (flexed?; mussel shell disc bead), Burial 12 (semi-extended; excised marine shell gorget), and Burial 14 (semi-extended; big sherd). (10) Of the burials for which sex was determined grave goods were with eight males (two of these not definite) and four females (one of these not definite). All three shell gorgets were with males, complete vessels were with one male and one female, a crude sandstone palette was with one male, whelk shell dippers were with one male, bone artifacts were with two males and two females, chert arrow points were with one male, and greenstone celts were with one male. Sex was not determined for any of the sub-adults with shell beads.

If the grave goods data from the poorly excavated burials are considered only one significant alteration of the above tabulation results. Burial 34, identified as female, had an engraved shell gorget; thus the total shell gorgets from Kellogg were with three males and one female. This contrasts with data from the Koger's Island, Little Bear Creek, Perry, and Flint River sites, where all shell gorgets occurred only with adult females (Peebles 1971:71-72).

The tight constriction of the skeletons of Burials 7, 9, and 17 indicates that wrap binding of the dead may have sometimes been practiced at Kellogg. Burials 7 and 17, both males, and Burial 9, a female, indicates that the practice was not confined to only one sex, if indeed the individuals had been wrapped.

That the definite Mississippian burials at Kellogg were all interred with the head in an easterly direction indicates that burial orientations were not random. Also, the fact that 21 of the 28 burials for which the exact directional orientation was discerned were oriented between due east and east-northeast may be significant in determining seasonality of the interments. This however, is dependent on the assumption that burial orientations were correlated with solar position,

which cannot be proved or disproved at present. Without going into a detailed and burdensome discussion of degree variations of the sun's traverse across the sky during different times of the year, it will perhaps suffice to state that if the burials were indeed oriented with the path of the sun then the fact that 21 of 28 burials were oriented between due east and east-northeast means that these interments, at least, took place during the summer solstice when the sun rises in that direction. If this hypothesis is viable and if this same patterned behavior also existed at such Moundville phase sites as Koger's Island and Snow's Bend, then interments at those sites more often took place during the winter solstice, for orientations there were predominantly between due east and east-southeast (see Peebles 1971:74-75). On the Tombigbee, site 1Pi33 in the Gainesville Lake possessed an early Moundville cemetery (Jenkins 1978:15) with non-random burial orientations. The report on the Gainesville excavations has not been issued but the burials at 1Pi33 were oriented in easterly directions (Jenkins 1979, Personal Communication). However, at the Tibbee Creek site where a small Moundville I cemetery was found (O'Hear et al. 1979:266), orientations varied considerably. Two burials in one row were oriented toward the east but three burials in the second row were oriented toward the south. Two other non-rowed cemetery burials were oriented toward the west and southeast respectively. In addition, three infant or child burials were found, each of which appeared to have been regularly spaced with reference to the walls of Structure 1, a two-room wall trench house. A burial on the north side of the north room was oriented toward the west, a burial on the west side of the north room was oriented toward the east, and a third, buried on the west side of the south room, was oriented toward the south (O'Hear et al. 1979; 150-151). McKenzie (1965:177) was unable to discern a clear pattern of orientation at Moundville but Peebles offers a possible explanation for this in stating that "one would expect that the burials in the village cemeteries will not only differ from mound burials, but also differ from the burials in the central town's cemeteries" (Peebles 1971: 74). Perhaps another possible explanation for the regularity of

orientations at the village sites (with the exception of Tibbee Creek) and the irregularity at Moundville could be that the latter site was probably occupied over a longer time span, thereby resulting in a mixture of burials from different temporal periods, each with their own non-random burial orientations.

The distribution of the grave goods in the Kellogg cemetery is worthy of comment for socio-economic patterning of burial locations is indicated. Of the 16 burials which possessed grave goods, seven were located in the approximate center of the site (Burials 1-3, 23, 29, 34, and 36). In this area were found the two most elaborately engraved shell gorgets, the ceremonial whelk shell dippers, a complete pottery vessel, the sandstone palette, and two large caches of marine shell cut beads. It is noteworthy that all four rowed burials lying within and adjacent to the Block 1 excavation unit possessed grave goods (Burials 1-3, 23) and that Burials 34 and 36, located directly west of them in another row, possessed the most elaborate grave goods (the two well executed shell gorgets and the whelk shell dippers). Other of the burials in this cluster could have possessed grave goods that were not recovered due to the disturbance by the earth mover.

Further south toward the periphery of the site grave goods were generally less complex. With the exception of Burial 7, which contained the largest number of items (two greenstone celts, five arrow points, a bone awl, and a complete pottery vessel), the remaining artifacts were distributed singularly among nine individuals and consisted of the two poorer quality shell gorgets, two partial Moundville Incised, variety Carrolton vessels, a large Mississippi Plain body sherd, a mussel shell disc bead, and three bone artifacts. As mentioned above, the latter bone artifacts may not have been intentionally placed with the burials.

Based strictly on the nature of the non-perishable burial accompaniments, it may be speculated that Burials 7, 34, and 36 held higher statuses than the others. However, the possibility that even more elaborate perishable grave goods were interred with some of the other individuals makes such a speculation somewhat tenuous.

One other circumstance in regard to status reflected by grave accompaniments should be mentioned. In Burial 36, which had one of the better quality engraved shell gorgets and the two whelk shell dippers, disarticulated infant bones were found (Burial 42). It is possible that these bones were accidental inclusions resulting from the disturbance of a prior grave when the Burial 36 grave was dug. It is also possible that the infant bones represent a ritual accompaniment. In regard to similar situations at Moundville, Peebles (1971:82) states:

> In all the mounds where burials were found, isolated "ritual" burials of skulls and infants were found; in two of the mounds, the bones of infants and children had been mixed with the grave fill of a high status burial.

Although it is unlikely that Burial 36 at Kellogg held nearly as high a status as those found with infant bones in the mounds at Moundville, the possibility exists that a similar ceremonialism was practiced in regard to the highest ranking members of village populations. That Burial 36, with its engraved gorget and probable ceremonial whelk shell dippers, seems to have been the highest ranking individual excavated at Kellogg tends to indicate that the infant bones with that burial were indeed ritual accompaniments.

Although the Mississippian period is much better understood than the Archaic period in the Upper and Central Tombigbee River Valley, many questions still await more definite or more acceptable answers. The various burial configurations and associations presented above from Kellogg are by no means definitive for the Moundville I phase and such questions as the following need additional research: (1) Is there a correlation between types of grave goods and the socio-religious and economic positions of the individuals? (2) Can the exact status of certain individuals be determined by assimilation, comparison, and analysis of burial traits from Mississippian sites investigated on the Tombigbee River and elsewhere? (3) Is there a correlation between burial position and social and economic status? (4) Is there a correlation between types of grave goods and age and sex differences? (5) Are there significant changes in patterned burial orientations through time within the Mississippian period? (6) Were infants sacrificed upon

the death of an important individual and interred with the body or were the bones of infants who died naturally saved for future interment with an important individual or perhaps a parent? (7) Were some shell gorgets meant to be worn daily and others only on special occasions or not at all until the death of the individuals with which they were buried? (8) Can the symbols and designs on certain shell gorgets be deciphered to reveal cultural data? (9) Does the fact that several identical gorgets have been found at several sites in and outside the Tombigbee River Valley indicate mass production by specialists or guilds located perhaps at major ceremonial centers? (10) Could an individual purchase or trade for a shell gorget on his or her own or were they awarded ceremonially by a superior? (11) Does each generally similar type of shell gorget found with burials indicate that all those individuals held the same social, religious, or economic position? (12) What temporal periods did the various identical gorgets which have been found span? (13) Can evolution of gorget motifs and designs be detected and used for absolute dating purposes if good radiocarbon dates can be acquired?

Other Features

A profuse quantity of post molds, pits, and other miscellaneous features were uncovered at Kellogg, many of which were not excavated because of lack of time. All 65 features encountered in the block units were excavated, of course, but 158 of the 224 features revealed by the grader stripping were left unexcavated. Post molds comprise the majority of the unexcavated features but all post molds defined, as well as the other features, were plotted on a site map. In all cases unexcavated features consisted of observable circular or irregular shaped dark soil in the surrounding lighter matrix. On Figures 5 and 16 the features excavated are delineated by their assigned number; those without numbers are those left unexcavated. Figure 16 depicts those which originated in the post-Archaic zone. Below, features excavated are discussed by the cultural component for which associations have been determined or are suspected. Data on all features excavated are presented in Table 11 and profiles are illustrated in Figures 17-18.

Those post molds which either definitely or apparently constitute individual structural patterns are depicted on Figure 5 as solid blackened circles whereas the remainder are un-blackened. The three structural patterns formed by post holes are discussed below as Structures 1, 2, and 3.

Archaic Features

In general 12 of the 15 identified Archaic features were quite similar in that they usually consisted of circular or oblong shaped, shallow pits with either flat or rounded bottoms (Figures 17 and 18). The largest pit, Feature 18, was 73 cm in diameter and 12 cm deep. The smallest, Feature 50, was 14 cm in diameter and 15 cm deep. The latter might possibly have been a post mold but the specific function of the 12 features are uncertain. They might have originally been cooking pits but the scarcity of wood charcoal and fired clay within the fills seems to indicate otherwise. All the pits were characterized by a dark, firm fill and a scarcity of cultural material. None contained shellfish and only three features contained animal bones, the latter

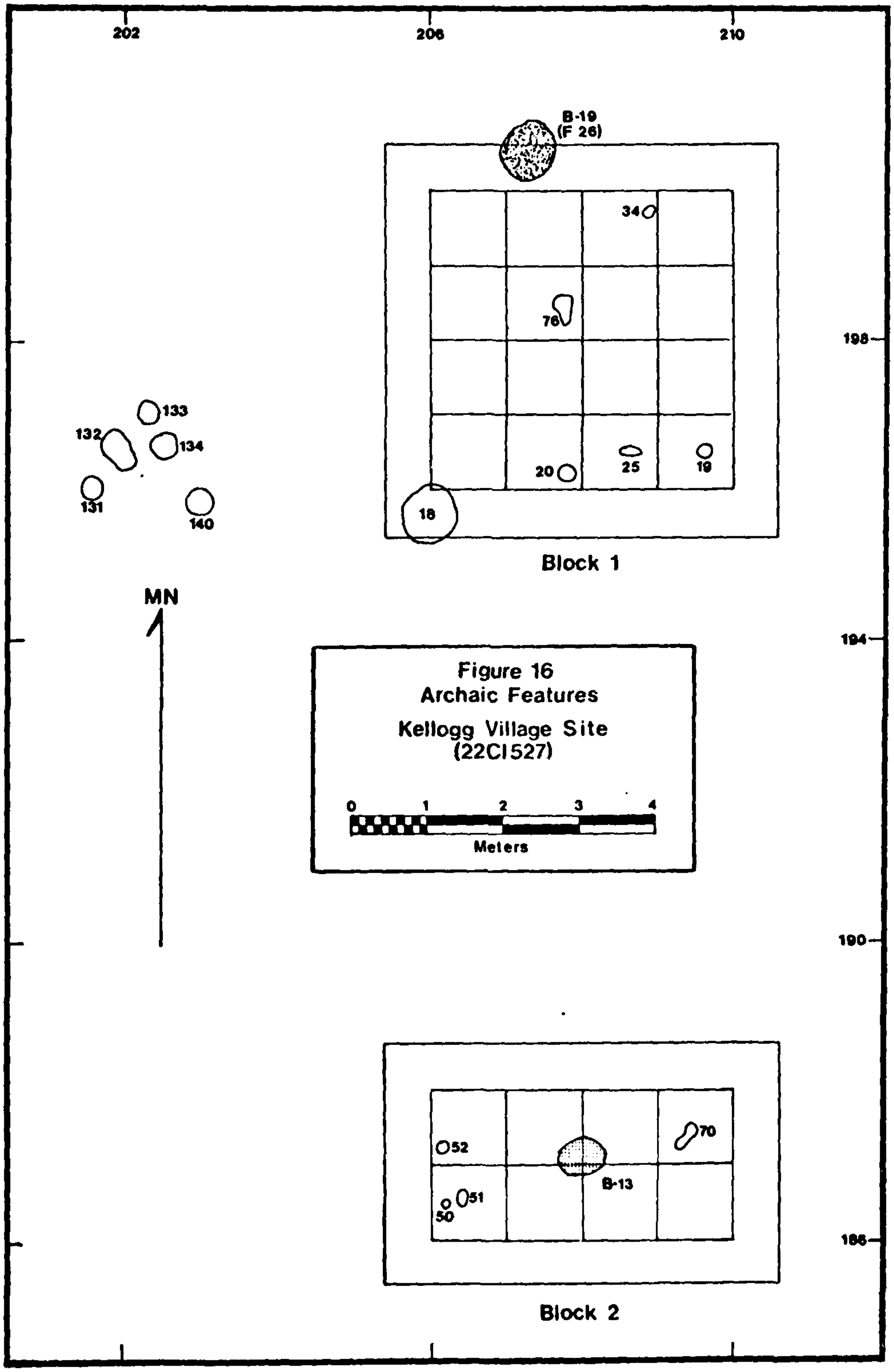


Figure 16
Archaic Features
Kellogg Village Site
(22CI527)

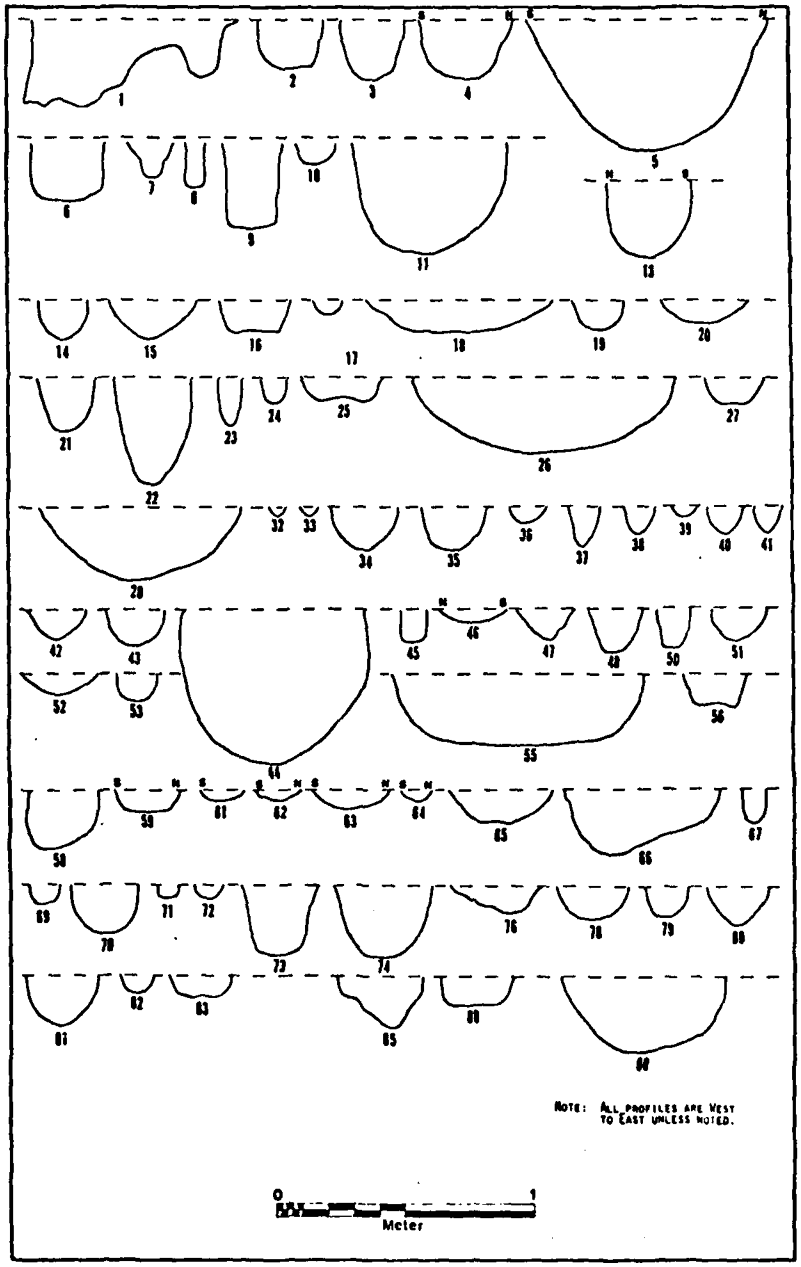


Figure 17. Vertical profiles of Features 1-90

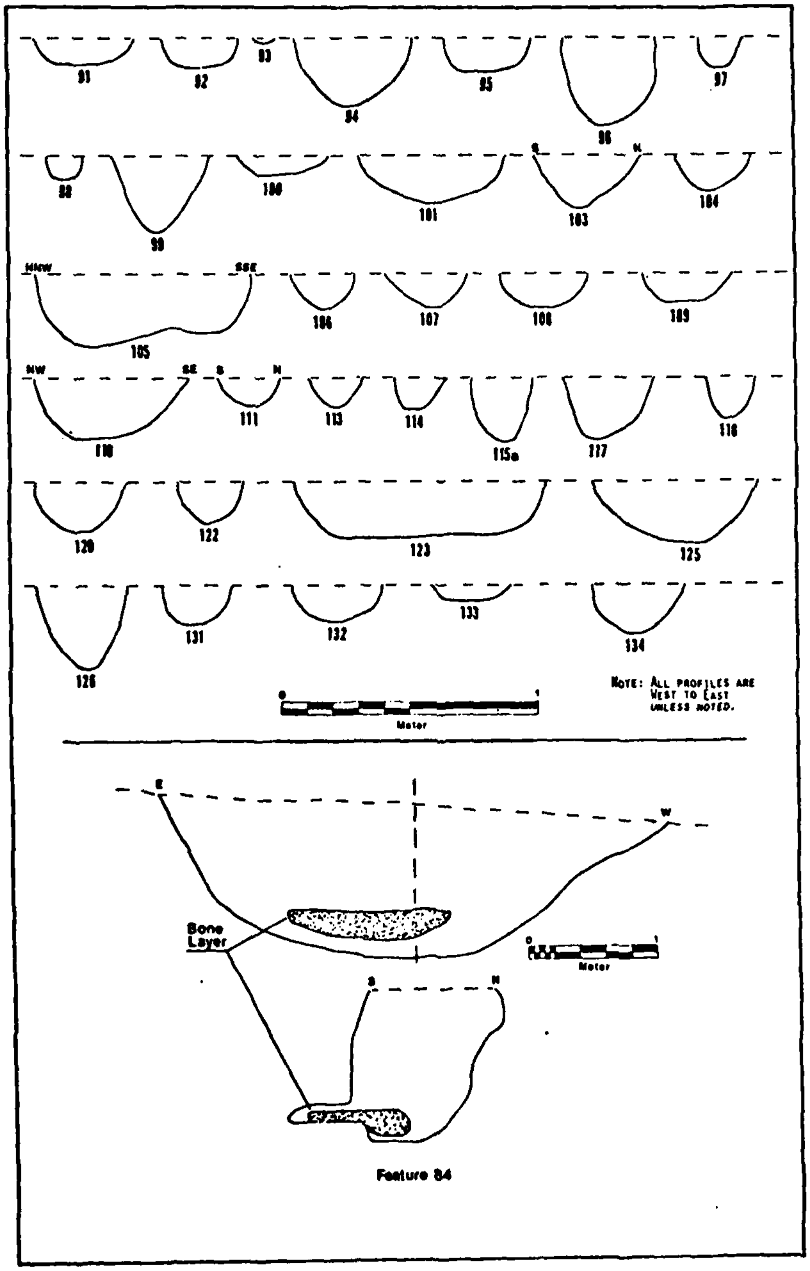


Figure 18. Vertical profiles of Features 91-134 and Feature 84

Table 11. Feature Data

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth+	Function	Contents
1	Miss.	80	45	35	oval	?	Shell, lithics, ceramics, charcoal, large mortar, hickory nut, animal bone
2	?	27	25	19.5	circular	Post mold?	Lithics, charcoal, hickory nut
3	Miss.	?*	25.5	18	irregular	Post mold?	Shell, lithics, ceramics, animal bone, charcoal, hickory nut, maize
4	Miller III	?*	36	22.5	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, walnut nut
5	Miss.	?*	81	49	circular	?	Shell, lithics, ceramics, animal bone, hickory nut, charcoal
6	?	35	29	21	oval	?	Shell, lithics, charcoal, hickory nut, fired clay
7	?	19	18	13	circular	Post mold	Shell, lithics, ceramics, charcoal, hickory nut
8	?	9	8	16.5	circular	Post mold	Shell, lithics, charcoal, hickory nut
9	?	25	23	33	circular	Post mold	Shell, lithics, ceramics, charcoal, hickory nut, animal bone
10	?	15.5	14	8	circular	Post mold	Shell, lithics, charcoal, hickory nut, animal bone
11	Miller III	60	43	28.5	oval	?	Shell, lithics, animal bone, charcoal, hickory nut
12 (no feature)							

+See Figures 17 and 18 for vertical profiles

*Obliterated by either backhoe trenching or stripping

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
13	Miller III	33	33	29	circular	?	Shell, lithics, ceramics, charcoal, hickory nut, animal bone
14	?	19	19	15	circular	Post mold?	Shell, lithics, ceramics, animal bone, charcoal, hickory nut, walnut nut, acorn shell
15	Miss.	34	29	15	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, maize
16	?	28	28	12	circular	?	Shell, lithics, ceramics, charcoal, hickory nut, animal bone
17	?	12	11	6	circular	Post mold?	Shell, lithics
18	Archaic	73	72	12	circular	?	Lithics, hickory nut, acorn shell, fired clay
19	Archaic	23	20	11	circular	?	Lithics (pebbles only)
20	Archaic	34	32	9	circular	?	Lithics (pebbles only)
21	Prob. Miss.	23	20	20	circular	Probable smudge pit	Shell, lithics, ceramics, charcoal, hickory nut, acorn shell, maize, pinecones, animal bone
22	?	30	25	41	oval	?	Shell, ceramics, lithics, charcoal, hickory nut, animal bone
23	?	10	9	19	circular	Post mold	Shell, ceramics, lithics, charcoal, hickory nut, animal bone
24	?	10	9	10	circular	Post mold	Shell, lithics, charcoal, hickory nut

AD-A102 243 MISSISSIPPI STATE UNIV MISSISSIPPI STATE DEPT OF ANTH--ETC F/G 5/6
THE KELLOGG VILLAGE SITE INVESTIGATIONS, CLAY COUNTY, MISSISSIP--ETC(U)
SEP 80 J R ATKINSON, J C PHILLIPS, R WALLING DACW01-77-C-0015

UNCLASSIFIED NL

3 OF 4
AD A
102243

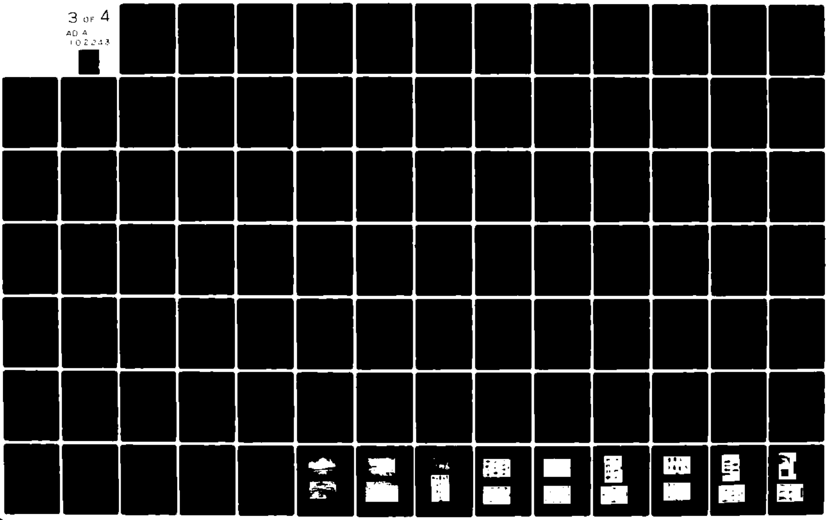


Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
25	?	31	15	9	oval	?	Shell, lithics, charcoal, hickory nut, acorn shell, animal bone, fired clay
26 (became Burial 19)	Archaic	102	76	29.5	oval	cremation burial pit	Burned human bone, possibly some burned animal bone, lithics, charcoal, hickory nut, acorn shell, fired clay
27	?	25	22	10	circular	?	Shell, lithics, charcoal, hickory nut, animal bone, fired clay
28	Miller III	79	71	20	oval	?	Shell, lithics, ceramics, animal bone, hickory nut, hackberry seed, charcoal
29	?	?*	?*	?*	?	roasting pit?	Acorn shell concentration
30	?	?*	?*	14	circular	?	Shell, lithics, charcoal
31	Miss.	?*	?*	33.5	circular?	?	Shell, lithics, ceramics, charcoal, animal bone
32	?	6.5	6.5	4	circular	Post mold	Shell, charcoal, fired clay
33	?	6.5	6.5	4	circular	Post mold?	Shell, charcoal, hickory nut
34	Archaic	32	26	14	oval	?	Lithics, charcoal, hickory nut
35	Miss.	37	25	18	oval	?	Shell, lithics, ceramics, charcoal, hickory nut, acorn shell, maize, animal bone
36	?	14	14	6	circular	Post mold?	Shell, lithics, charcoal, hickory nut, fired clay

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition			Shape of mouth	Function	Contents
		L	W	D			
37	?	13	12	16	circular	Post mold	Shell, lithics, ceramics, charcoal, hickory nut, animal bone
38	?	12	11	11	circular	Post mold	Shell, lithics, charcoal, animal bone, hickory nut, fired clay
39	?	10	10	4	circular	Post mold?	Shell, lithics, ceramics
40	?	10	14	11	oval	Post mold	Shell, lithics, hickory nut, fired clay
41	?	12	10	11	circular	Post mold	Shell, lithics, hickory nut, fired clay
42	?	22	22	11	circular	Post mold?	Shell, lithics, charcoal, hickory nut, animal bone, fired clay
43	?	22	?*	14	circular	Post mold?	Shell, lithics, charcoal, hickory nut, animal bone
44	Late Miller II	100	70	60	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, acorn shell, persimmon seeds
45	?	12	10	13	circular	probable food processing pit	Shell, lithics, charcoal, hickory nut, acorn shells and kernels, fired clay
46	Miller II	25	?	4	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut
47	?	23	22	12	oval	Post mold?	Shell, lithics, ceramics, charcoal, hickory nut, acorn shell, animal bone
48	?	29	21	17	oval	Post mold?	Shell, lithics, charcoal, hickory nut, acorn shell, fired clay

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
49 (no feature)							
50	Archaic	14	13	15	circular	Possible post mold	Lithics (pebbles only), hickory nut, fired clay
51	Archaic	31	21	13	oval	?	Lithics, hickory nut, fired clay
52	Archaic	31	30	8	circular	?	Lithics, hickory nut, fired clay
53	?	16	15	9	oval	Post mold	Shell, charcoal, hickory nut
54	?	32	17	15	oval	?	Shell, lithics, ceramics, charcoal, pinecone, hickory nut
55	Miss.	98	41	28.5	oval	probable food processing pit	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, acorn shells and kernels, pinecone, maize, copper-leaf seed
56	?	27	25	13	circular	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, acorn shells and kernels
57	Possible Late Archaic	--	--	--	---	---	Cache of 5 preforms and 1 adze just below shell zone; no pit defineable
58	?	29	27	22	circular	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nut
59	Prob. Miss.	26	24	14	circular	probable smudge pit	Shell, lithics, charcoal, animal bone, hickory nut, acorn shell, maize, pinecone, fired clay
60 (no feature)							

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
61	Prob. Miss.	18	16	13	circular	probable smudge pit	Shell, lithics, ceramics, charcoal, animal bone, hickory nut, acorn shells and kernels, maize, pinecone and nuts, fired clay
62	Prob. Miss.	17	14	12	oval	probable smudge pit	Shell, lithics, animal bone, charcoal, maize, fired clay
63	Prob. Miss.	28	28	16	circular	probable smudge pit	Shell, lithics, charcoal, pinecone and nuts, hickory nut, animal bone, fired clay
64	Prob. Miss.	12	12	11	circular	probable smudge pit	Shell, lithics (pebbles), charcoal, hickory nut, maize, pinecone and nuts
65	Prob. Miss.	41	40	13	circular	probable smudge pit	Lithics, ceramics, charcoal, hickory nut, maize, animal bone
66	Miss.	67	61	25	circular	?	Shell, lithics, ceramics, charcoal, animal bone
67	?	11	9	14	oval	Post mold	Shell, charcoal, animal bone, hickory nut
68	?	10	9	4	circular	Post mold?	Lithics, charcoal
69	?	13	11	8	oval	Post mold?	Shell, lithics, charcoal, hickory nut
70	Archaic	40	26	19	irregular	?	Lithics
71	?	10	8	4	circular	Post mold?	Shell, lithics, charcoal, hickory nut
72	?	14	11	5	oval	Post mold?	Lithics, charcoal, hickory nut
73	Miss.	46	30	27	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nut

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
74	Miss.	38	37	28	circular	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nut
75	Archaic						Feature consisted of a straight, narrow strip of bone meal 1 m in length
76	?	35	23	10	irregular	?	Shell, lithics, charcoal, hickory nutshell, fired clay
77 (became Burial 13)							
78	Late Gulf Formational	28	10	13	oval	?	Shell, ceramics, charcoal, hickory nutshell
79	?	17	12	12	oval	?	Shell, charcoal, hickory nutshell
80	?	14	14	15	circular	Post mold?	Shell, lithics, ceramics, charcoal, hickory nutshell, acorn kernel
81	?	29	28	20	circular	?	Shell, lithics, charcoal, animal bone, hickory nutshell, acorn shell, walnut nutshell, fired clay
82	?	15	13	7	circular	Post mold?	Shell, lithics, charcoal, animal bone, hickory nutshell, fired clay
83	Miller III	30	24	9	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn shell, walnut nutshell, acorn shell, walnut nutshell, persimmon seed

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
84	Early Miller III	400	100	120	crescent	apparent tree tip-up hole used as a trashpit	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn shell
85	Miss.	60	33	24	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell, hackberry seed
86	Miller III	--	--	--	--	?	Feature consisted of a concentration of sherds, shell, and a few animal bones on the surface following grader stripping
87	Miss.	--	--	--	--	?	Same as above
88	Miller III	28	24	11	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
89	?	115	75	5	irregular circular	Fire hearth	Fired clay
90	?	64	49	29	oval	probable food processing pit	Shell, lithics, charcoal, animal bone, hickory nutshell, acorn shell, persimmon seed, fired clay
91	?	39	38	9	circular	?	Shell, lithics, fired clay, charcoal, hickory nutshell
92	?	29	29	10	circular	?	Lithics (pebbles), fired clay, hickory nutshell
93	?	8	8	3	circular	Post mold?	Lithics (pebbles), hickory nutshell
94	Miller II	47	46	26	circular	?	Shell, lithics, ceramics, animal bone, charcoal

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
95	?	36	36	16	circular	?	Shell, lithics, charcoal, animal bone, hickory nutshell, fired clay
96	Miller III	36	36	33	circular	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell
97	?	20	20	12	circular	Post mold?	Shell, lithics, charcoal, hickory nut-shell, pincone
98	?	14	14	10	circular	Post mold	Shell, lithics, charcoal, hickory nut-shell, fired clay
99	Miss.	55	37	29	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell, walnut nutshell
100	Late Gulf Formational	35	24	7	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
101	poss. Miller II	74	57	18	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
102 (no feature)							
103	Late Gulf Formational	45	42	20	circular	?	Shell, lithics, ceramics, charcoal, hickory nutshell, animal bone
104	?	29	26	14	oval	?	Shell, lithics, animal bones, charcoal, hickory nutshell, fired clay
105	Miller III	83	31	28	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, grape seed

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
106	?	30	25	14	oval	?	Shell, lithics, charcoal, hickory nutshell, fired clay
107	?	32	32	13	circular, sides of pit fired	fire basin	Shell, lithics, charcoal, animal bone, hickory nutshell, acorn shell, fired clay
108	Miss.	34	31	13	circular	probable food processing pit	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn nutshells and kernels, maize, pinecone, unidentified disseminule seed
109	Prob. Miss.	34	27	11	oval	fire basin?	Shell, lithics, charcoal, hickory nutshell, fired clay
110	Poss. Miller II	60	33	23.5	oblong	?	Shell, lithics, ceramics, charcoal, hickory nutshell, fired clay
111	Miss.	50	40	25	irregular	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
112	Miller III	23	22	9	circular	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
113	?	21	16	21	oval	Post mold?	Shell, lithics, charcoal, animal bone, hickory nutshell, fired clay
114	?	20	20	12	circular	Post mold?	Shell, lithics, charcoal, animal bone, hickory nutshell, fired clay
115a	Miss.	29	28	25	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn shell
115b	Miss.	30	29	26	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn shell

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
115c	Miss.	31	30	25	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn shell, maize
115d	Miss.	29	27	24	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell
115e	Miss.	28	29	27	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn nutshell
115f	Miss.	30	30	25	circular	Post mold	Shell, lithics, ceramics, animal bone
115g	Miss.	28	29	26	circular	Post mold	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell, acorn nutshell, maize
115h	Miss.	32	31	24	circular	Post mold	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell, acorn shells and kernels, maize, persimmon seed, grape seed
115i	Miss.	29	28	25	circular	Post mold?	Lithics, hickory nutshell, fired clay
115j	Miss.	30	29	26	circular	Post mold?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell, acorn nutshell, walnut nutshell
115k	Miss.	21	20	23	circular	Post mold	Shell, lithics, ceramics, charcoal, animal bone, maize, pinecone
116	Prob. Miss.	21	18	5	circular	Probable smudge pit	Shell, lithics, charcoal, maize, pinecone and nuts, hickory nutshell, fired clay

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
117	Miss.	44	35	24	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell, acorn nutshell
118	?	19	19	16	circular	Post mold	Shell, lithics, animal bone, charcoal, hickory nutshell, acorn nutshell, fired clay
119	Miss.	25	25	15	?	Probable smudge pit	Shell, lithics, ceramics, charcoal, hickory nutshell, acorn nutshell, maize, pinecone
120	Miller III	42	35	19	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
121	Miss.	39	36	9	circular	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell
122	Miss.	25	23	16	circular	Probable food processing pit	Shell, lithics, ceramics, charcoal, hickory nutshell, walnut nutshell, pinecone and nuts, persimmon seed
123	Miller III	98	94	21	circular	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
124	Miss.	135	125	12	oval	?	Shell, lithics, ceramics, charcoal, maize
125	Poss. Miller II	64	55	24	oval	?	Shell, lithics, ceramics, animal bone, charcoal, hickory nutshell
126	Miss.	35	35	32	circular	?	Lithics, ceramics, animal bone
127 (no feature)							

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
128 (no feature)							
129 (no feature)							
130 (no feature)							
131	Archaic	30	27	15	circular	?	Lithics, charcoal, hickory nutshell, fired clay
132	Archaic	60	35	14	oval	?	Lithics, charcoal, hickory nutshell, fired clay
133	Archaic	33	30	6	circular	?	Lithics, charcoal
134	Archaic	35	32	20	circular	?	Lithics, charcoal, hickory nutshell, acorn shell, fired clay
135	Prob. Late Gulf Formational	105+	90	90+	oblong	Possible tree tip-up used as a refuse pit	Lithics, ceramics, charcoal, animal bone, hickory nutshell
136	Late Gulf Formational	45	39	24	oval	?	Shell, lithics, ceramics, charcoal, animal bone, hickory nutshell
137	Poss. Miss.	12	12	50	circular	Post mold	Shell, lithics
138	Miss.	12	12	55	circular	Post mold	Shell, ceramics, lithics
139 (no feature)							
140	Archaic	50	50	5	circular	fire hearth	Fired clay area, lithics

Table 11. (cont.)

Feature no.	Cultural association	Maximum dimensions at point of recognition L	W	D	Shape of mouth	Function	Contents
141 (no feature)							
142	Poss. Miss.	20	20	15	circular	Post mold	Shell, ceramics
143	Poss. Miss.	13	13	20	circular	Post mold	Shell, ceramics

consisting of a total of four small, unidentifiable burned fragments. Floral material, consisting of hickory nuts and sometimes acorns, was present in eight of the pits. Lithic material primarily consisted of small quantities of flakes, fire-cracked pebbles, and whole pebbles. Feature 18 contained a small yellow chert biface but no other tools were present in any of the pits. As discussed below, Feature 34 contained enough wood charcoal for an unadjusted radiocarbon date of 4,030±150 B.C.

Feature 140, the only non-pit Archaic feature encountered, was revealed by the earth mover during the deep stripping of Grader Cut 1 on the last day of the excavations. The feature, which was somewhat disturbed by the earth mover, consisted of an area of fired clay or soil approximately 5 to 10 cm in thickness and about 50 cm in diameter. The feature was hurriedly investigated by hand and the only cultural item observed and recovered was a bell-shaped sandstone pestle (Plate 19) which lay in the fired clay area. The feature, probably a fire hearth, occurred at approximately 60 cm below the surface.

During the testing in 1974 north of Block 1, only one Archaic feature was defined (Blakeman 1975:178). About 65 cm in width and 30 cm deep, the pit was not recognized until sterile soil was reached. Part of the feature extended into the pit wall and upon close examination of the wall profile the pit was determined to have originated at 70 cm below the surface. No cultural material was found in the remaining lower portion of the feature within the unit but hickory nut shell was recovered in the flotation sample (Blakeman 1975:37).

Late Gulf Formational (Henson Springs phase) Features

Five pit features have been assigned to this component but two of these, Features 78 and 135 are uncertain. Feature 78, a small pit, contained only a single sherd of Alexander Pinched, which might have been intrusive. Feature 135, a very large and deep pit, was revealed by the earth mover and hurriedly investigated. Only the east end of the feature was excavated but four sherds, all Alexander Incised, were removed by hand. In the absence of complete excavation, therefore, it can only be stated that Feature 135 appears to have

had a Henson Springs phase association.

In regard to cultural material in the five pits, Features 78, 103, and 136 contained shellfish and all but Feature 78 contained animal bones (see faunal discussion below). All contained small amounts of wood charcoal and Feature 78 also possessed hickory shell; however, Feature 135 was not subjected to flotation. All but Feature 78 contained lithics consisting of flakes, fire-cracked pebbles, whole pebbles, and pieces of sandstone, a few of which displayed ground surfaces. No flaked tools were recovered.

Features 100 and 136 produced valuable data on Alexander ceramics and the latter produced the first Henson Springs phase radiocarbon date in the Tombigbee Valley. As discussed above in the ceramics section, Feature 100 produced a partial six-sided and six-legged Alexander Incised vessel (named herein variety Kellogg) and Feature 136 produced a partial six-legged, beaker-shaped Alexander Incised, variety Negro Slough vessel. Feature 136 also produced the unadjusted radiocarbon date of 760±70 B.C. (see radiocarbon date discussion below).

Miller II Features

Three Miller II pit features have been identified as well as three other pits which are possibly associated with the component. All the pits were generally basin shaped and all contained mussel shells and animal bones in much higher quantity than did the Henson Springs phase features. The original function of the pits is undetermined but their final use as trash depositories seems fairly obvious. The three definite Miller II pits, for example, contained over 1500 animal bones and over 15,000 grams of mussel shells, along with significant quantities of pottery sherds and lithic materials. The possible Miller II features contained over 1000 animal bones and over 8,600 grams of mussel shells. All except Feature 94 produced floral specimens. Features 44, 46, 101, 110 and 125 contained hickory and Feature 44 also contained acorn, walnut, and persimmon. Lithic material was generally confined to flakes, fire-cracked pebbles, whole pebbles, and pieces of sandstone, but several tools were also present including one specimen each of Class G and Class L projectile points/knives from Feature 44 (see Tables

2 and 3 and lithic discussion above).

Perhaps the most significant Miller II feature was Feature 44, which was actually not on the site proper. This feature, isolated about 30 m to the north of the site, was revealed by a bulldozer during clearing of the vegetation by the construction company in preparation for the canal excavation. Because of its distance from the site proper, it is not shown on Figure 5 but it lay about 10 m from the river and on the east side of the entrance road which led to and across the site.

Except for the uppermost portion removed by the bulldozer, Feature 44 was in excellent condition. The deep, slightly bell-shaped pit contained a large quantity of mussel shells, animal bones, pottery sherds, and lithic material. Wood charcoal was present in moderate quantity and flotation produced hickory, walnut, acorn, and persimmon.

The presence of both Marksville Incised, variety Yokena and Mulberry Creek Cordmarked ceramics in association with typical Miller II Furrs Cordmarked sherds (see Table 7) implies that Feature 44 probably dates to Late Miller II. A radiocarbon date obtained on charcoal was A.D. 760±205 (see radiocarbon dates discussion below).

Miller III Features

Twelve Miller III features, all of which were pits, have been identified. The original function of these features are uncertain. With the exception of Feature 84, the typical pit was basin-shaped but a few others had tapering sides and flat bottoms (see Figure 18). No large, bell-shaped pits like those common at the Cofferdam site (Blakeman, Atkinson, and Berry 1976) were present but one pit, Feature 96, had slightly expanding sides.

Feature 84 was atypical in that the pit was crescent-shaped, 4 m in length, and over 1 m in depth (Plate 50). This large pit appeared to have been a natural tree tip-up hole utilized as a trash depository. An enormous quantity of refuse was present in the fill and provided the best Miller III data of all the features excavated.

All the Miller III features contained mussel shells and animal bones (see Table 19). Feature 84 produced the majority of these with

8,026 animal bones and 73,277 grams of mussel shells. All 12 features contained hickory nut fragments. Two also contained walnut shell fragments, two contained acorn fragments, and one contained a grape seed (see Table 17). Lithics and ceramics, sometimes in large quantities, were present in all 12 features, the former including a number of tools (see lithic discussion above).

The ceramics in most of the Miller III pits were too few to indicate whether an Early or Late Miller III affiliation was represented. Ceramic data from Features 11, 84, and 123, however, tends to point toward a possible Early Miller III affiliation because of the presence of sand tempered pottery. Feature 11 contained seven sherds of Furrs Cordmarked, 11 Baldwin Plain, three Mulberry Creek Cordmarked and two Baytown Plain. According to Jenkins' (1979) system of component assignment, a pit with an assemblage similar to Feature 11's would be assigned to Early Miller III, as would the one from Feature 84, which contained 73 sherds of Furrs Cordmarked, 130 Baldwin Plain, 73 Baytown Plain, and 37 Mulberry Creek Cordmarked. A pre-Late Miller III assignment to Feature 84 is further supported by the absence of Madison points in the large pit (see lithic discussion above). A radiocarbon date obtained was A.D. 780±430 (see radiocarbon date discussion below). Feature 123 contained a large portion of a Mulberry Creek Cordmarked vessel (Plate 25), 111 additional sherds of Mulberry Creek Cordmarked, 23 Baytown Plain sherds, 12 Baldwin Plain sherds, eight Furrs Cordmarked sherds, two Withers Fabric Impressed sherds, and two Marksville Incised sherds. This assemblage might suggest an Early Miller III affiliation except for the dominance of Mulberry Creek Cordmarked over Baytown Plain, which Jenkins (1979:266) contends should be reversed. This feature, however, illustrates the drawback in assigning relative ages on the basis of the sherd ratio in a pit assemblage. It is perfectly logical that more Mulberry Creek Cordmarked sherds should have been in Feature 123 considering that it contained the remains of a very large Mulberry Creek Cordmarked vessel. Since only about half of this vessel was reconstructable, many of the 111 Mulberry Creek Cordmarked sherds probably belonged to it. In any feature the sherds present were

undoubtedly not deposited intentionally so as to reflect the actual ratio of the different ceramics being manufactured at the time. Thus Feature 123, as well as Features 11 and 84, might be Early Miller III but could just as well be Late Miller III with all the sand tempered types being intrusive from an earlier component or components. Jenkins (1979:266) acknowledges the latter circumstance by stating in regard to Early Miller III sherd ratios that, "It is difficult to determine how much of these ceramics were inclusive sherds from earlier components."

A small Miller III pit containing flakes, hickory nut, animal bones and mussel shells was found during the 1974 testing (Blakeman 1975:176). The circular, basin-shaped pit, 26 cm in diameter and 30 cm deep, also contained 12 Mulberry Creek Cordmarked sherds, two Baytown Plain sherds, one Baldwin Plain sherd, and four sherds described as "sand tempered with Mulberry Creek Cordmarked surface treatment" (Blakeman 1976:176). All these sherds seemed to be contemporary for they were tightly concentrated in the small pit. The cordmarked sand tempered sherds probably should have been classified as Furrs Cordmarked. In any case, their association with the Mulberry Creek Cordmarked sherds indicates that the pit dated to the early part of the Miller III period, assuming that sand tempering was non-existent in the late part of the period.

Mississippian Features

Thirty-two Mississippian features were excavated and seven other excavated features are considered to have had probable Mississippian affiliations. The features (Table 11; Figure 18) consisted primarily of small to medium-sized pits and for some the function has been determined. Specifically, nine definite and probable Mississippian features appear to have been "smudge" pits for they contained concentrations of either charred corn cobs, pine cones, nut shell, or combinations of these materials (see Floral discussion below and Appendix B). Three other Mississippian pits are considered to possibly have been used in food processing for they contained significant quantities of charred hickory nut shell, acorn shell, acorn kernels, maize cupules, maize kernels, and lesser amounts of walnut shell, pinecone, pine nuts, and persimmon seeds.

Many of the remaining identified Mississippian features were definite post molds and other post molds are probably represented among the smaller features with undetermined functions. Eleven definite post molds (Features 115A-115K) comprise Structure 1, discussed below.

The only Mississippian feature encountered during the 1974 testing was a circular, 26 cm-wide post mold. In the bottom of the post mold was a large fragment of a Moundville Incised, variety Moundville vessel (Blakeman 1975:176, Plate 16; also Plate 29 this report). An unadjusted radiocarbon date of 1195±76 was obtained on charcoal from the post mold (Blakeman 1975:96, 177).

Structural Remains

Although a large quantity of apparent post molds was recorded at Kellogg, only one complete structural pattern and two apparent partial structural patterns were discerned. All three patterns represent structures with individual posts set in a circular fashion. The common rectangular or square wall trench type house so often found associated with Mississippian occupations was not encountered in the areas excavated but the presence of one or more elsewhere on the site cannot be discounted. Of the three structures discussed below, Structure 1 is definitely of Mississippian affiliation but the affiliations of Structures 1 and 2 are uncertain.

Structure 1. A circular, individual-post structure of 10 round post molds (Plate 53; Figure 5) was revealed by the road grader stripping and subsequent hand troweling of Grader Cut 1. The pattern was easily discernable for the area in which it was located was free of feature congestion like the areas north of it. Each post mold was excavated and their contents conclusively indicate a Mississippian affiliation, for five possessed shell tempered sherds. The post molds varied slightly in size but the average diameter was approximately 30 cm and average depth was approximately 25 cm. The original depth of the molds was deeper, of course, the uppermost portions having been destroyed by cultivation and, to a certain extent, by the road grader. In diameter the structural pattern was approximately 2.8 m. No evidence of a living floor or interior posts existed. A small pit, Feature 109, was located

near the interior boundary of the wall pattern but a lack of diagnostic material in its fill made definite association with the structure uncertain. However, Feature 109, which was 34 cm maximum in diameter and 11 cm deep, contained numerous small pieces of charcoal and the bottom consisted of fired clay. Thus it is quite likely that Feature 109 was a fire basin associated with Structure 1. A smaller post mold (Feature 115-K), was located near the outside of the wall on the north side but association with the structure is uncertain. It might possibly have been associated with an entranceway. Other possible direct associations with Structure 1 include Burial 33, located near the wall to the south, and the six rowed burials located to the northwest (Figure 5).

The function of Structure 1 is unclear but it probably was a dwelling house, especially if the apparent fire basin (Feature 109) was associated. Other possible functions could be either a storage bin, a sweat house, or even a menstrual hut. If indeed a dwelling, it might have been a winter house similar to those described by an early 18th century trader with the Chickasaws and Creeks:

> The clothing of the Indians being very light, they provide themselves for the winter with hot-houses, whose properties are to retain, and reflect the heat, after the manner of the Dutch stoves. To raise these, they fix deep in the ground, a sufficient number of strong forked posts, at a proportional distance, in a circular form, all of an equal height, about five or six feet above the surface of the ground: above these, they tie very securely large pieces of the heart of white oak, which are of a tough flexible nature, interweaving this orbit, from top to bottom, with pieces of the same, or the like timber. Then, in the middle of the fabric they fix very deep in the ground, four large pine posts, in a quadrangular form, notched a-top, on which they lay a number of heavy logs, let into each other, and rounding gradually to the top. Above this huge pile, to the very top, they lay a number of long dry poles, all properly notched, to keep strong hold of the under posts and wall-plate. Then they weave them thick with their split sapplings, and daub them all over about six or seven inches thick with tough clay, well mixt with withered grass: when this cement is half dried, they thatch the house with the longest sort of dry grass, that their land produces. They first lay on one round tier, placing a split sappling a-top, well tied to different parts of the under pieces of timber, about fifteen inches below the eave: and, in this manner, they proceed circularly to the very spire, where commonly a pole is fixed, that displays on the top the

> figure of a large carved eagle. At a small distance below which, four heavy logs are strongly tied together across, in a quadrangular form, in order to secure the roof from the power of envious blasts. The door of this winter palace, is commonly about four feet high, and so narrow as not to admit two to enter it abreast, with a winding passage for the space of six or seven feet, to secure themselves both from the power of the bleak winds, and of an invading enemy...As they have no metal to reflect the heat; in the fall of the year, as soon as the sun begins to lose his warming power, some of the women make a large fire of dry wood...When the fire is a little more than half burnt down, they cover it over with ashes, and, as the heat declines, they strike off some of the top embers, with a long cane, wherewith each of the couches, or broad seats, is constantly provided; and this method they pursue from time to time as need requires, till the fire is expended, which is commonly about day-light. While the new fire is burning down, the house, for want of windows and air, is full of hot smoky darkness; and all this time, a number of them lie on their broad bed places, with their heads wrapped up (Adair 1930:5).

A detailed illustration of the Chickasaw winter house, as well as the rectangular summer house, may be found in Jennings (1941:Figure 4).

Structure 2. Partially in Grader Cut 1, Structure 2 also consisted of a circular pattern of round post molds (Figure 5). The west area of the structure was not excavated due to the lack of time but if it had been the pattern probably would have been complete. The structure along the north-south axis was approximately 5.5 m in diameter. Time allowed the excavation of only five of the post molds, most of which were about 12 cm in diameter. One of these, Feature 138, was about 55 cm in depth and contained a single Mississippi Plain sherd along with three Baldwin Plain sherds and one Mulberry Creek Cordmarked sherd. Feature 137 contained no ceramics but Feature 142 contained a single Mulberry Creek Cordmarked sherd and Feature 143 contained a single Alexander Punctate sherd. Feature 126, sub-conical in shape and containing two Mississippi Plain sherds, was in line with the post mold pattern but was much larger than normal (35 cm in diameter). For that reason it may not have been a post mold. However, another similar-sized stain (not excavated) occurred about 50 cm southeast of Feature 126 (see Figure 5). Thus it is possible that these two features represented posts on either side of an entranceway.

The definite cultural affiliation of Structure 2 is uncertain because of the incomplete excavation. However, the presence of shell tempered sherds in Features 126 and 138 lends support to a Mississippian affiliation rather than Miller III or earlier. Unfortunately, the features discovered within the structure do little to help clarify the picture. If we assume that the post mold pattern continued in the unexcavated area to form a complete circle then at least three Mississippian adult burials (28, 39, and 40) were within the house. Two infant burials (24 and 30) were also within the house but their cultural affiliations are uncertain. In addition, three pit features within the structure were excavated. Feature 122 appears to have been a post mold and could have represented a center post for the house. This feature contained one Mississippi Plain sherd and one Mulberry Creek Cordmarked sherd. The presence of the shell tempered sherd indicates that the feature was of Mississippian affiliation. Feature 123, a medium-sized, basin-shaped pit, was definitely of Miller III affiliation as evidenced by the greater portion of a *Mulberry Creek Cordmarked* vessel and the large amount of other Miller III sherds. A single Mississippi Plain sherd possibly intruded through an apparent post mold located in the edge of the pit. The extreme bottom portion of the post mold became visible in the base of the pit but it was impossible to determine which was intrusive into which because of the identical soil coloration of each. The third pit (Feature 136) within the presumably round structure was the Late Gulf Formational feature which contained the partial Alexander Incised, variety Negro Slough vessel described above. Although possible, it is unlikely that Structure 2 was affiliated with the Late Gulf Formational component.

In conclusion, the cultural affiliation of Structure 2 is uncertain but the existing evidence suggests that it was associated with the Mississippian component. As evidenced by the numerous burials and other features on the site, an intensive Mississippian occupation apparently occurred and floral evidence indicates that it may have been year-around (see floral discussion below). The presence of circular Structure 1, which was definitely of Mississippian affiliation, also

lends support to Structure 2 as having a Mississippian association. On the other hand, the archaeologically known Miller II and Miller III houses were similar to Structures 1 and 2 in that they were circular with individual posts (Jennings 1941:Figure 3; Jenkins 1979:270). Although Structure 1 is definitely of Mississippian affiliation it is possible that Structure 2 was associated with either the Miller III or Miller II occupations.

Structure 3. This apparent structure in Grader Cut 3 (Figure 5) was represented by another circular or slightly oblong pattern of round post molds averaging about 10 cm in diameter. The structure was approximately 2.25 m in diameter along the north-south axis. There was an absence of detectable post molds on the west side, which either means that the structure was open-ended, originally completely enclosed but with post mold evidence obliterated, or that the structure was never finished. Unfortunately this area was not troweled until there was only time left to record the visible features. None of the wall post molds were excavated nor were any of the apparent post molds/other features within the structure excavated. If they had been, more could probably be said about the cultural affiliation than the fact that the Mississippian burials distributed around it (Figure 5) suggests that the structure was standing at the time of interment. This simply could be coincidence, however, and the structure could be Miller II or Miller III. Though unlikely, it could even be Late Gulf Formational for Feature 100, which contained the partial Alexander Incised, variety Kellogg vessel was located near the east wall. On the north side of the structure, however, was Feature 108, a small Mississippian pit filled with charred acorns, corn kernels, hickory nut fragments, and pinecone. Near the south wall and possibly associated with the structure was Feature 89 (Figure 5), a large area of reddish colored fired clay which presumably was a fire hearth.

VII. SPECIAL STUDIES

Soil Analysis

A series of representative soil samples from the Kellogg site were analyzed for phosphate and pH. The 16 samples were taken from pit features, burials, and vertical levels of the general midden (Table 12). Studies have shown that high values of phosphate are closely related to human cultural activity and that animal products produce higher content of phosphate than do vegetable products (Sjoberg 1976). The purposes of the soil tests, therefore, were (1) to obtain possible useful data in regard to differential man-induced soil enrichment as reflected through chemical analysis of the general cultural deposit from the Archaic to Woodland/Mississippian levels, and (2) to compare chemical levels in various functional features for possible implications in regard to differential human activities associated with those features.

The results of the soil test analysis are inconclusive but some interesting correlations between chemical levels and cultural activities as indicated by interpretations of the archaeological record are in evidence. As will be noted on Table 12, the phosphate levels from all 16 samples are very high. This, of course, is not surprising considering that all but one of the samples were taken from soils associated with human activity. The remaining sample, from sterile Level 14 in Block 1, is also very high but the 275 ppm is the lowest of all the samples analyzed. The fact that the phosphate counts increase in each 20 cm level from the sterile soil to the top of the cultural deposit appears to indicate a corresponding increase in human activity from the initial Archaic occupation to the later Woodland/Mississippian occupations.

The samples taken from burials and other features show differential phosphate counts which may result from different usages of the feature types. Generally, the features with the highest ppm counts are also those which contained the greatest amount of animal matter.

Table 12. pH and Phosphate Analysis of Soil from Selected Features and Levels.

Provenience	pH	Phosphate (P_2O_5)
Block 2, 0-20 cm	7.8	515 H^+*
Block 2, 20-40 cm	7.3	515 H^+
Block 2, 40-60 cm	7.3	459 H^+
Block 2, 60-80 cm	7.3	380 H^+
Block 2, 80-100 cm	7.5	395 H^+
Block 1, 120-130 cm	7.6	275 H^+
Feature 84	7.3	638 H^+
Feature 85	7.8	459 H^+
Feature 131	7.7	502 H^+
Feature 132	7.1	498 H^+
Feature 133	7.5	491 H^+
Feature 134	7.6	477 H^+
Feature 136	7.7	638^+ H^+
Burial 1	7.6	638^+ H^+
Burial 7	7.5	638^+ H^+
Burial 19	7.5	638^+ H^+

*H^+ means very high

These are Burial 1, Burial 7, Burial 19, Feature 84, and Feature 136, all with 638+ ppm counts. The soil samples from Mississippian Burials 1 and 7 were taken from around the pelvic region of the skeletons and that from Burial 19, the Archaic cremation, was taken from the lower part of the pit. Both of the pit feature samples which yielded 638+ ppm counts contained significant quantities of animal matter. Feature 84, a large Early Miller III pit, contained thousands of animal bones and mussel shells and Feature 136, a small Gulf Formational pit, contained animal bones and mussel shells in moderate quantities. In contrast, the samples from Features 131-134, small pits originating near the base of the Archaic deposit, produced phosphate counts between 477 and 502 ppm. An absence of animal bones and mussel shells in these features could be due to non-preservation, but the considerably lower phosphate counts than those from the above-mentioned features which contained these materials may indicate that the Archaic pits originally contained little or no animal remains. However, the sample from Feature 85, a small Mississippian pit, had a lower phosphate count than did Features 131-134, but the former contained relatively large quantities of animal bones and shellfish.

The pH measures from the 16 samples are also shown on Table 12. A pH below 7.0 indicates an acid soil and a pH above 7.0 indicates an alkaline soil. That all 16 samples showed a pH above 7.0 is somewhat surprising for there was extremely poor bone preservation in the Archaic deposit. Soil acidity is not the only cause of poor bone preservation, however; at Kellogg the moist soil conditions in the Archaic deposit undoubtedly is the primary cause of poor preservation. The good bone preservation in the Woodland/Mississippian deposit and features can probably be attributed mainly to the calcium provided by the numerous mussel shells present.

Flora

Floral specimens were recovered at Kellogg primarily by flotation but occasional concentrations of charred plant materials were collected by hand during excavation. One hundred nineteen excavated

features yielded floral specimens as did nearly all levels in the two flotation squares. Appendix B consists of a report on the analysis of the recovered plant remains and below the data obtained in that report have been used in a discussion of dietary customs by cultural component. As noted in that appendix, the specimens recovered and identified are not necessarily representative of the full range of plant materials that may have been utilized at the site because of differential preservation potential. It should also be kept in mind that all floral specimens from a feature attributable to a specific cultural group may not necessarily have been used by that group, for feature fills on a multi-component site such as Kellogg nearly always contain earlier materials. This of course, does not apply to the deepest features in the midden attributable to the initial occupants of the site.

Eight features of definite Archaic affiliation contained charred plant remains (Table 17) consisting predominantely of hickory (Carya sp.) and lesser amounts of acorn (Quercus sp.). All eight features contained hickory, three also contained acorn, and four contained unidentifiable wood charcoal. Plant remains from the Archaic levels in the two flotation squares (Tables 13,14) also consisted of a predominance of hickory followed by acorn and small quantities of black walnut (Juglans sp.) and persimmon (Diospyros sp.). Based on the presence of these fall maturing plant foods, fall and early winter occupation by the Archaic inhabitants is indicated. This speculation assumes, however, that the plant remains recovered had not been gathered earlier elsewhere and stored for later consumption at the Kellogg site.

The numerical distribution of the plant remains in the Archaic zone appears significant in regard to site use through time. As shown on Tables 13 and 14, the hickory nut and acorn remains were heavily concentrated in Levels 4, 5, and 6 of Square 197N203E and in Levels 2, 3, and 4 of Square 186N297E. Although these levels of concentration are different between the two squares, they are still generally comparable because of the differences in overall deposit depth at the two square locations. In both squares, the levels of highest plant concentrations were in the top third of the Archaic deposit, which presumably

Table 13. Plant Remains from Block I, Unit 197N208E.

Level	*Carya* sp. nutshell	*Quercus* sp. nutshell	*Quercus* sp. acorn kernel	*Juglans* sp. nutshell	*Zea mays* L. cupules	*Diospyros* sp. seeds	*Stipa* sp. seeds	*Ostyra* sp. seed	Unidentified seeds	Contaminants	Wood Charcoal
1	4.2g					1c					3.3g
2	21.6g	0.3g		0.1g			1c			3c	8.4g
3	11.6g	0.1g			1c						1.0g
4	57.4g	0.9g	0.2g	0.4g		1c			1c		2.5g
5	33.0g	0.4g									0.1g
6	26.1g	0.2g	0.1g						2c		0.5g
7	14.8g	0.1g									0.5g
8	1.2g	0.1g									0.1g
9	6.1g	0.1g						1c			.2g
10	0.5g	0.1g									0.1g

g = grams c = individual count

Table 14. Plant Remains from Block 2, Unit 186N207E

Level	*Carya* sp. nutshell	*Quercus* sp. acorn shell	*Juglans* sp. nutshell	*Diospyros* sp. seeds	*Rubus* sp. seeds	Contaminant	Wood Charcoal
1	0.7g	0.1g				34c	0.3g
2	43.6g	0.5g	0.2g			3c	1.0g
3	40.0g	0.1g	0.2g		1c		1.7g
4	21.3g	0.3g		1c		1c	0.3g
5	6.0g	0.1g					0.2g
6	6.8g	0.1g					0.1g
7	0.1g						
8	0.4g						

g = grams   c = individual count

Table 15. Floral Contents of the Probable Mississippian Smudge Pits

Provenience	*Carya sp.* nutshell	*Quercus sp.* acorn shell	*Quercus sp.* acorn kernel	*Zea mays L.* cupules	*Zea mays L.* kernels	*Pinus sp.* pinecone	*Pinus sp.* pinenuts	wood charcoal
Feature 21	7.0g	0.3g		1.8g		17.4g	14c	4.0g
Feature 59	0.2g	0.1g		71c		2.5g		2.1g
Feature 61	0.5g	0.4g	0.2g	2c	26c	0.1g		0.5g
Feature 62				240c	1c			0.1g
Feature 63	0.1g					4.7g	22c	0.5g
Feature 64	0.1g			2c		0.5g	3c	0.1g
Feature 65	1.3g			5.3g				1.7g
Feature 116	0.1g			164c		3.1g	11c	0.1g
Feature 119	2.3g	0.3g		1c	7c	0.3g		0.7g

g = grams c = individual count

Table 16. Floral Contents of Probable Food Processing Areas

Provenience	Cultural affiliation	*Carya sp.* nutshell	*Quercus sp.* nutshell	*Quercus sp.* kernels	*Juglans sp.* nutshell	*Zea mays* cupules	*Zea mays* kernels	*Pinus sp.* pinecone	*Pinus sp.* pinenuts	*Diospyros* seeds	Wood Charcoal
Feature 45	?	1.1g	8.7g	0.6g							0.1g
Feature 55	Miss.	0.5g	0.6g	4c		1c		0.1g			1.0g
Feature 90	?	1.8g	0.1g							1c	0.1g
Feature 108	Miss.	0.2g	14.0g	47.5g		45c	160c	0.2g			5.0g
Feature 122	Miss.	1.1g			0.1g			1.0g	1c	3c	48.1g

g - grams c - individual count

Table 17. Plant Remains from Other Features.

Feature	Cultural affiliation	*Carya* sp. nutshell	*Quercus* sp. acorn shell	*Quercus* sp. acorn kernels	*Juglans* sp. nutshell	*Zea mays* L. cupules	*Zea mays* L. kernels	*Diospyros* sp. seeds	*Vitis* sp. seeds	*Pinus* sp. pinecone	Contaminants	Wood Charcoal
1	Miss.	0.2g										0.3g
2	?	0.1g										
3	Miss.	0.9g				1c						0.1c
4	MIII	0.1g			0.1g							0.2g
5	Miss.	0.4g										0.4g
6	?	0.2g										
7	?	0.4g										0.1g
8	?	0.2g										
9	?	1.4g										4.0g
10	?	0.1g										
11	MIII	3.1g										1.0g
13	MIII	0.2g										
14	?	0.7g	0.1g		0.2g							0.3g
15	Miss.	0.8g				1c						0.4g
16	?	0.7g										0.6g
18	Archaic	1.6g	0.1g									
22	?	0.1g										0.1g
23	?	0.1g										
24	?	0.1g										
25	?	0.3g	0.1g									
26 (Bu19)	Archaic	0.2g	0.1g									
27	?	0.8g										
28	MIII	0.4g									1c	0.2g
35	Miss.	0.5g	0.4g			1c						
36	?	0.1g										
37	?	0.8g										0.2g
38	?	0.7g										
40	?	0.5g										
41	?	0.3g										
42	?	0.8g										
43	?	0.6g										0.2g
44	Late MII	1.0g	0.1g					2c				0.3g
46	MII	0.3g										
47	?	1.5g	0.2g									0.1g
48	?	0.3g	0.1g									1.0g
50	Archaic	7.3g										0.1g
51	Archaic	0.1g										
52	Archaic	0.8g										
53	?	0.1g										2.0g
54	?	0.3g								0.6g		
56	?	0.8g	0.1g	0.2g								9.5g
58	?	0.1g										0.1g
66	Miss.	0.2g										0.4g
67	?	0.1g										
69	?	1.0g										
71	?	0.1g										
72	?	0.1g										
73	Miss.	1.2g										0.3g
74	Miss.	0.8g										0.2g
76	?	0.3g										
78	Late Gulf Form.	0.2g										0.1g
79	?	0.3g										
80	?	0.3g	0.1g									0.5g
81	?	1.7g	0.1g		0.1g							1.0g
82	?	0.3g										0.2g
83	MIII	0.5g	0.1g		0.1g			1c				0.3g

TABLE 17. Continued.

Feature	Cultural affiliation	*Carya sp.* nutshell	*Quercus sp.* acorn shell	*Quercus sp.* acorn kernels	*Juglans sp.* nutshell	*Zea mays L.* cupules	*Zea mays L.* kernels	*Diospyros sp.* seeds	*Vitis sp.* seeds	*Pinus sp.* pinecone	Contaminants	Wood Charcoal
84	Early MIII	2.0g	0.1g									.6g
85	Miss.	0.3g									1c	0.3g
88	MIII	1.6g										2.8g
91	?	0.2g										
92	?	0.1g										
93	?	0.1g										
94	MII											5.0g
95	?	0.1g										
96	MIII	0.1g										0.3g
97	?	0.2g								0.1g		1.7g
98	?	0.3g										
99	Miss.	1.0g			0.1g							0.2g
100	Late Gulf Form.	0.6g										
101	MII?	0.6g										2.0g
103	Late Gulf Form.	0.8g										
104	?	0.1g										
105	MIII	1.5g							1c			0.3g
106	?	0.6g										
107	?	0.8g	0.1g									36.4g
110	MII?	1.0g										
111	Miss.	0.4g										
112	MIII	0.4g										54.2g
113	?	1.1g										0.1g
114	?	1.1g										0.2g
115A	Miss.	0.7g	0.1g									0.5g
115B	Miss.	0.7g	0.1g			1c						0.1g
115C	Miss.	1.0g	0.1g									0.2g
115D	Miss.	0.5g										0.3g
115E	Miss.	3.8g	0.1g									0.4g
115F	Miss.	0.7g	0.1g									0.5g
115G	Miss.	1.4g	0.1g				4c					0.5g
115H	Miss.	4.9g	0.8g	0.3g		1c	18c	2c	1c			1.0g
115I	Miss.	2.5g										
115J	Miss.	2.8g	0.1g		0.1g							0.3g
115K	Miss.	1.6g				1c	2c			0.1g		0.5g
117	Miss.	0.1g										1.4g
118	?	2.8g	0.1g									0.2g
120	MIII	0.7g										0.3g
121	Miss.	0.2g										
123	MIII	0.2g										0.5g
124	Miss.	0.1g				3c	5c					0.1g
125	MII?	2.6g										0.1g
131	Archaic	4.0g										0.3g
132	Archaic	1.2g										0.4g
134	Archaic	1.2g	0.1g									0.6g
135	Late Gulf Form.	4.8g										
136	Late Gulf Form.	0.6g										0.5g

was of Late Archaic derivation. Moreover, in both squares the quantities of hickory nut remains consistently increased from the lower to the higher proveniences within these three levels of concentration. It is difficult to determine just what this data signifys but more intense utilization of the site during the nut collecting period of the year during Late Archaic times is indicated. This intensity could have resulted from several factors, one of which might have been an increase in the numbers of individuals in the groups, which would have resulted in corresponding increases in the volume of nuts collected and consumed. Or, the increased intensity might have been in the form of longer and/or more consistent use of the site from year to year. On the other hand, a less likely explanation for the increase could be that the earlier occupants simply did not throw as many nut hulls into their fires as did the later occupants.

During the post-Archaic period of habitation the floral data indicates that nut procurement during the post-Archaic period of habitation continued to be an important activity at the site. This is not reflected, however, in the low quantities of plant remains recovered from the distrubed post-Archaic deposit in the two flotation squares (see Tables 13 and 14). The dramatic decrease in quantity from that of the immediate sub-plowzone levels is probably a result of disintegration of the fragile charred plant material due to cultivation disturbance. That nuts continued to be important during post-Archaic times is indicated by the presence of nut remains in all but one of the approximately 110 post-Archaic features that contained charred floral material (Tables 15-17). In these features hickory was present consistently and about 33% of them also contained acorn. Other floral specimens recovered from post-Archaic features include walnut, persimmon, pinecone and pine nuts (*Pinus* sp.), grape (*Vitis* sp.), and maize (*Zea mays*).

Of the 18 features which contained maize (Tables 15-17) 11 have been determined by the presence of shell tempered sherds to possess Mississippian associations. The cultural associations of the other

seven features could not be definitely determined but it is likely that most and probably all of these were also Mississippian features, expecially six which were clustered and may have been "smudge pits" (see Appendix B). However, maize has been discovered in definite association with the Miller III component at the nearby Cofferdam site (Blakeman, Atkinson, and Berry 1975:121), so the possibility exists that one or more of these unidentifiable features had a Miller III affiliation.

In summary, the inhabitants of the Kellogg site consistently utilized hickory nuts and acorns. Minor amounts of other plant remains such as black walnut, persimmon, and grape indicates that a variety of naturally occurring dietary plant items also were used. During at least the last prehistoric utilization of the Kellogg site a non-native plant, maize, was present and probably constituted the mainstay of the diet.

Fauna

In Table 18 is tabulated all the faunal material recovered by hand or in screens 1/4" or larger from each 10 cm level of the 24 1 x 1 m squares excavated. In Table 25 is tabulated faunal materials extracted from 10% samples of the materials caught in the window screen from the squares where utilized, namely 198N209E and 187N208E. Complete analysis of all faunal material caught in the window screen would have been preferable but extraction and examination of each tiny bone from the bulk caught in the screens would have been too time consuming and therefore prohibitive in terms of funds available for the faunal analysis. However, the bones analyzed from the 10% samples should be fairly representative of the whole. Finally, in Table 19 is tabulated the faunal remains recovered from features. All faunal material recovered by hand or caught in the 1/4" screens was analyzed but only selected features and their window screen faunal contents were examined. These features are indicated by an asterisk on Table 19.

With regard to the mussel shells recovered at Kellogg, only those from features have been identified by species. The total weight in grams of shells from the general excavations and from features are shown on Tables 18 and 19, and Table 1 of Appendix D shows the species and

TABLE 18. FAUNAL SPECIMENS FROM EXCAVATION UNITS.

Provenience and Recovery Method

196N206E (1/4" dry)

	1	2	3	4	5	6	7	8	9	10	Total
MAMMALS											
White-tailed Deer (Odocoileus virginianus)	4	23									27
cf. white-tailed deer											
cf. pig (Sus scrofa)											
Artiodactyls (Artiocactyla)											
Raccoon (Procyon Lotor)		1									1
Rabbit (Sylvilagus sp.)											
Gray Squirrel (Sciurus carolinensis)											
Fox Squirrel (Sciurus niger)	1										1
Squirrel (Sciurus sp.)	1										1
Opossum (Didelphis virginiana)											
Beaver (Castor canadensis)											
Dog (Canis familiaris)											
Rodent (Rodentia)											
Unidentified small mammalia	3	1									4
Unidentified med. mammalia			1								1
Unidentified large mammalia											
Unidentified mammalia			1							1	2
REPTILES											
Mud & Musk Turtle (Kinosternidae)	31	13	1								45
Musk Turtle (Sternotherus sp.)											
Pond Turtle (Chrysemys sp.)											
cf. pond turtle											
Box Turtle (Terrapene sp.)											
cf. box turtle											
Softshell Turtle (Trionys sp.)	2										2
Unidentified Turtle (Celonia)											
Common snakes: Colubrids (Colubridae)											
Vipers (Crotalinae)											
Snakes (Serpentes)											
BIRDS											
Turkey (Meleagris gallopavo)											
Unidentified	3	1				1					5
AMPHIBIANS											
Salamander (Urodela)											
Frog/toad (Anura)											
FISH											
Bowfin (Amia calva)											
cf. bowfin											
Freshwater Catfish (Ictalurus sp.)											
cf. freshwater catfish			1								1
Drumfish (Aplodinotus grunniens)		3									3
Gar (Lepisosteus sp.)											
Unidentified bony fish (Osteichthyes)	3	2									5
MISCELLANEOUS UNIDENTIFIED BONE	75	14	9								98
TOTAL ELEMENTS	123	58	13	0	0	1	0	0	0	1	196
MUSSEL SHELL (grams)	9545	3636	905	124	66	31	1	2			14310

196N207E (1/4" wet)

	1	2	3	4	5	6	7	8	9	10	Total
MAMMALS											
White-tailed Deer (Odocoileus virginianus)	3	2									5
cf. white-tailed deer											
cf. pig (Sus scrofa)											
Artiodactyls (Artiocactyla)											
Raccoon (Procyon Lotor)	1										1
Rabbit (Sylvilagus sp.)											
Gray Squirrel (Sciurus carolinensis)											
Fox Squirrel (Sciurus niger)											
Squirrel (Sciurus sp.)											
Opossum (Didelphis virginiana)		1									1
Beaver (Castor canadensis)											
Dog (Canis familiaris)											
Rodent (Rodentia)											
Unidentified small mammalia											
Unidentified med. mammalia					1						1
Unidentified large mammalia	3	2									5
Unidentified mammalia											
REPTILES											
Mud & Musk Turtle (Kinosternidae)	1										1
Musk Turtle (Sternotherus sp.)											
Pond Turtle (Chrysemys sp.)	1										1
cf. pond turtle											
Box Turtle (Terrapene sp.)											
cf. box turtle											
Softshell Turtle (Trionys sp.)	1										1
Unidentified Turtle (Celonia)	26	2					1				29
Common snakes: Colubrids (Colubridae)		1									1
Vipers (Crotalinae)											
Snakes (Serpentes)	4										4
BIRDS											
Turkey (Meleagris gallopavo)											
Unidentified											
AMPHIBIANS											
Salamander (Urodela)											
Frog/toad (Anura)											
FISH											
Bowfin (Amia calva)											
cf. bowfin											
Freshwater Catfish (Ictalurus sp.)											
cf. freshwater catfish											
Drumfish (Aplodinotus grunniens)											
Gar (Lepisosteus sp.)											
Unidentified bony fish (Osteichthyes)	1										1
MISCELLANEOUS UNIDENTIFIED BONE	254	19	2	12	3		2			1	293
TOTAL ELEMENTS	295	27	2	12	4	0	3	0	0	1	344
MUSSEL SHELL (grams)	10250	909	147	317	91	31	36	3	10	21	11999

196N208E (1/4" wet)

	1	2	3	4	5	6	7
MAMMALS							
White-tailed Deer (Odocoileus virginianus)	8						
cf. white-tailed deer							
cf. pig (Sus scrofa)							
Artiodactyls (Artiocactyla)							
Raccoon (Procyon Lotor)	1						
Rabbit (Sylvilagus sp.)							
Gray Squirrel (Sciurus carolinensis)							
Fox Squirrel (Sciurus niger)							
Squirrel (Sciurus sp.)	1						
Opossum (Didelphis virginiana)							
Beaver (Castor canadensis)							
Dog (Canis familiaris)							
Rodent (Rodentia)							
Unidentified small mammalia							
Unidentified med. mammalia							
Unidentified large mammalia							
Unidentified mammalia			1				
REPTILES							
Mud & Musk Turtle (Kinosternidae)	45		2		2	1	
Musk Turtle (Sternotherus sp.)							
Pond Turtle (Chrysemys sp.)	4						
cf. pond turtle							
Box Turtle (Terrapene sp.)							
cf. box turtle							
Softshell Turtle (Trionys sp.)	9						
Unidentified Turtle (Celonia)							
Common snakes: Colubrids (Colubridae)							
Vipers (Crotalinae)							
Snakes (Serpentes)							
BIRDS							
Turkey (Meleagris gallopavo)	1						
Unidentified	15						
AMPHIBIANS							
Salamander (Urodela)							
Frog/toad (Anura)		1					
FISH							
Bowfin (Amia calva)							
cf. bowfin							
Freshwater Catfish (Ictalurus sp.)							
cf. freshwater catfish							
Drumfish (Aplodinotus grunniens)	1						
Gar (Lepisosteus sp.)	2						
Unidentified bony fish (Osteichthyes)	7						
MISCELLANEOUS UNIDENTIFIED BONE	90						
TOTAL ELEMENTS	184	1	3	0	2	1	0
MUSSEL SHELL (grams)	9431	793	95	38	10	1	

TABLE 18. Continued

	Provenience and Recovery Method																								
	196N208E (Cont.)			196N209E (1/4" wet)										197N206E (1/4" wet)							197N207E (1/4" wet)				
	8	9	Total	1	2	3	4	5	6	7	8	9	Total	1	2	3	4	5	6	Total	1	2	3	4	5
MAMMALS																									
White-tailed Deer																									
(Odocoileus virginianus)			8	8	4			2					14		1	1				2		2			
cf. white-tailed deer					3								3												
cf. pig (Sus scrofa)																					1				
Artiodactyls (Artiocactyla)																									
Raccoon (Procyon Lotor)			1																						
Rabbit (Sylvilagus sp.)				2	3	5							10												
Gray Squirrel (Sciurus carolinensis)																					1	1			
Fox Squirrel (Sciurus niger)				1									1												
Squirrel (Sciurus sp.)			1		1								1												
Opossum (Didelphis virginiana)					1								1												
Beaver (Castor canadensis)																									
Dog (Canis familiaris)																									
Rodent (Rodentia)				1									1												
Unidentified small mammalia					2								2		2		5			7					
Unidentified med. mammalia																						2			
Unidentified large mammalia					2								2		2					2					
Unidentified mammalia	1		2	5	2			1					8	2	1					3		2			
REPTILES																									
Mud & Musk Turtle																									
(Kinosternidae)			50	1	3								4		2					2		5			
Musk Turtle (Sternotherus sp.)															1					1					
Pond Turtle (Chrysemys sp.)			4	2	1	1							4		2					2		1			
cf. pond turtle							2						2												
Box Turtle (Terrapene sp.)																						1			
cf. box turtle															1					1		1			
Softshell Turtle (Trionys sp.)			9	8									8		4					4		7			
Unidentified Turtle (Celonia)				25	32			4					61		24	2	1	1		28	2	21	1		
Common snakes: Colubrids																									
(Colubridae)				2	2								4	1	2					3		5			
Vipers (Crotalinae)				1									1												
Snakes (Serpentes)				4	2								6		4					4		2			
BIRDS																									
Turkey (Meleagris gallopavo)			1		1								1												
Unidentified			15		4								4												
AMPHIBIANS																									
Salamander (Urodela)																									
Frog/toad (Anura)			1																						
FISH																									
Bowfin (Amia calva)																									
cf. bowfin															1					1					
Freshwater Catfish																									
(Ictalurus sp.)															1					1		1			
cf. freshwater catfish					1								1												
Drumfish (Aplodinotus grunniens)			1	1	2			1					4												
Gar (Lepisosteus sp.)			2	2				1					3		2					2					
Unidentified bony fish																									
(Osteichthyes)			7	1	6								7		3		1			4					
MISCELLANEOUS UNIDENTIFIED BONE			90	359	254	12	10	14	10		3		662	35	226	19		1	2	283	26	179	22	2	
TOTAL ELEMENTS	1	0	191	423	326	18	12	23	10		3	0	815	38	279	22	7	2	2	350	30	230	23	2	0
MUSSEL SHELL (grams)		1	10369	12613	3068	274	343	373	53	10	31	13	16778	1351	8863	291	193	22	4	10724	1136	5499	437	22	9

TABLE 18. Continued

	Provenience and Recovery Method																												
	197N207E (Cont.)					197N208E (flotation)								197N209E (1/4" wet)												198N206E (1/4" wet)		
	6	7	8	9	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	8	9	10	11	Total	1	2	3
MAMMALS																												
White-tailed Deer (Odocoileus virginianus)					2	3	3						6	8	11	1				1					21	3		
cf. white-tailed deer																												
cf. pig (Sus scrofa)					1																							
Artiodactyls (Artiocactyla)																												
Raccoon (Procyon Lotor)																												
Rabbit (Sylvilagus sp.)														3											3			
Gray Squirrel (Sciurus carolinensis)					2	1							1														1	
Fox Squirrel (Sciurus niger)																												
Squirrel (Sciurus sp.)														4											4			
Opossum (Didelphis virginiana)														1	1										2			
Beaver (Castor canadensis)																												
Dog (Canis familiaris)																											1	
Rodent (Rodentia)											1		1													1		
Unidentified small mammalia																												
Unidentified med. mammalia					2	1							1														1	
Unidentified large mammalia																											3	
Unidentified mammalia					2	2							2						1						1	7		
REPTILES																												
Mud & Musk Turtle (Kinosternidae)					5																						1	
Musk Turtle (Sternotherus sp.)																												
Pond Turtle (Chyrsemys sp.)					1																							
cf. pond turtle																												
Box Turtle (Terrapene sp.)					1	2	3						5															
cf. box turtle					1																							
Softshell Turtle (Trionys sp.)					7	3	2						5	8	3			1							12			
Unidentified Turtle (Celonia)					24	8	24		2				34	55	17	4	2			1					79	4	5	
Common snakes: Colubrids (Colubridae)					5												1								1		2	
Vipers (Crotalinae)																												
Snakes (Serpentes)					2		2	1					3	3	7			1	1						12			
BIRDS																												
Turkey (Meleagris gallopavo)															1	2			1						4			
Unidentified							2						2	7	7										14			
AMPHIBIANS																												
Salamander (Urodela)																										1		
Frog/toad (Anura)																												
FISH																												
Bowfin (Amia calva)																												
cf. bowfin																												
Freshwater Catfish (Ictalurus sp.)					1																						2	
cf. freshwater catfish																												
Drumfish (Aplcdinotus grunniens)						1							1	1											1	3		1
Gar (Lepisosteus sp.)								1	1				2	7		1									8			
Unidentified bony fish (Osteichthyes)						1	3						4	8	1										9			
MISCELLANEOUS UNIDENTIFIED BONE		2			231	175	61	8	2				246	100	25	6	6								137	335	106	4
TOTAL ELEMENTS	0	2	0	0	287	197	100	10	5	0	1	0	313	205	73	14	9	2	3	2	0	0	0	0	308	354	122	5
MUSSEL SHELL (grams)	2	7	2	2	7116	17430	7154	39	103	29	9	1	24765	13522	1477	397		9	12	3	2	7		5	15434	11133	1644	33

TABLE 18. Continued

	Provenience and Recovery Method																									
	198N206E (Cont.)							198N207E (1/4" wet)											198N208E (1/2" wet)							
	4	5	6	7	8	9	Total	1	2	3	4	5	6	7	8	9	10	Total	1	2	3	4	5	6	7	Total
MAMMALS																										
White-tailed Deer (Odocoileus virginianus)							3	4	29									33								
cf. white-tailed deer																			1							1
cf. pig (Sus scrofa)																										
Artiodactyls (Artiocactyla)									1									1								
Raccoon (Procyon Lotor)																										
Rabbit (Sylvilagus sp.)																										
Gray Squirrel (Sciurus carolinensis)							1	2		1								3								
Fox Squirrel (Sciurus niger)																										
Squirrel (Sciurus sp.)								2	1									3								
Opossum (Didelphis virginiana)								1										1								
Beaver (Castor canadensis)																										
Dog (Canis familiaris)							1																			
Rodent (Rodentia)							1		1									1								
Unidentified small mammalia										1								1								
Unidentified med. mammalia		1					2																			
Unidentified large mammalia							3	2										2								
Unidentified mammalia							7					1						1	3							3
REPTILES																										
Mud & Musk Turtle (Kinosternidae)							1	2	2				1					5		2						2
Musk Turtle (Sternotherus sp.)											1							1		1						1
Pond Turtle (Chrysemys sp.)								35										35								
cf. pond turtle																										
Box Turtle (Terrapene sp.)								2										2								
cf. box turtle																										
Softshell Turtle (Trionys sp.)								6	7									13								
Unidentified Turtle (Celonia)		1					10	13	55	12	2							82	1	11	3					15
Common snakes: Colubrids (Colubridae)							2	2		1								3								
Vipers (Crotalinae)																										
Snakes (Serpentes)								3	2	1								6		1						1
BIRDS																										
Turkey (Meleagris gallopavo)									1									1								
Unidentified								5	10									15								
AMPHIBIANS																										
Salamander (Urodela)							1																			
Frog/toad (Anura)																				1						1
FISH																										
Bowfin (Amia calva)										1								1		1						1
cf. bowfin																										
Freshwater Catfish (Itcalurus sp.)							2		1									1								
cf. freshwater catfish																										
Drumfish (Aplodinotus grunniens)							4																			
Gar (Lepisosteus sp.)																				1	1					2
Unidentified bony fish (Osteichthyes)								3	13	4	1							21		1						1
MISCELLANEOUS UNIDENTIFIED BONE	2		3				450	211	50	68	11	11	4		3	2		360	8	150	3					161
TOTAL ELEMENTS	2	2	3	0	0	0	488	293	173	89	15	12	5	0	3	2	0	592	13	169	7	0	0	0	0	189
MUSSEL SHELL (grams)	12	5	8	1	1	3	12840	6818	5454	1250	82	80	10	7		3	2	13706	3910	5871	827	78	22	12	13	10733

TABLE 18. Continued

	Provenience and Recovery Method																									
	198N209E (1/4" wet; 1/16" on Table 25)											199N206E (1/2" dry)						199N207E (hand)								
	1	2	3	4	5	6	7	8	9	10	Total	1	2	3	4	5	Total	1	2	3	4	5	6	7	8	Total
MAMMALS																										
White-tailed Deer (Odocoileus virginianus)		3	1	1							5	1	10	4			15									
cf. white-tailed deer																										
cf. pig (Sus scrofa)																										
Artiodactyls (Artiocactyla)																										
Raccoon (Procyon Lotor)																										
Rabbit (Sylvilagus sp.)	1		1					1			3								1							1
Gray Squirrel (Sciurus carolinensis)		2									2															
Fox Squirrel (Sciurus niger)																										
Squirrel (Sciurus sp.)																										
Opossum (Didelphis virginiana)																										
Beaver (Castor canadensis)														1			1									
Dog (Canis familiaris)																										
Rodent (Rodentia)																										
Unidentified small mammalia	1										1	1					1									
Unidentified med. mammals																										
Unidentified large mammals			2			1					3								6							6
Unidentified mammalia	1	1	7					2			11															
REPTILES																										
Mud & Musk Turtle (Kinosternidae)		2	1		1			1			5															
Musk Turtle (Sternotherus sp.)																										
Pond Turtle (Chrysemys sp.)																										
cf. pond turtle			1								1															
Box Turtle (Terrapene sp.)			1								1															
cf. box turtle																										
Softshell Turtle (Trionys sp.)	1	2		1							4															
Unidentified Turtle (Celonia)	1	7	5	1		2	1	1			18		4	2			6		4							4
Common snakes: Colubrids (Colubridae)	1		2			1					4															
Vipers (Crotalinae)		1									1															
Snakes (Serpentes)				1							1															
BIRDS																										
Turkey (Meleagris gallopavo)														1			1									
Unidentified												1		1			2									
AMPHIBIANS																										
Salamander (Urodela)																										
Frog/toad (Anura)																										
FISH																										
Bowfin (Amia calva)				1							1															
cf. bowfin																										
Freshwater Catfish (Ictalurus sp.)																										
cf. freshwater catfish																										
Drumfish (Aplodinotus grunniens)		3									3															
Gar (Lepisosteus sp.)																										
Unidentified bony fish (Osteichthyes)			3			1					4														1	1
MISCELLANEOUS UNIDENTIFIED BONE	144	123	110	32	13	8	10	16	3		459	3					3	1	14	4				1	1	21
TOTAL ELEMENTS	150	144	134	37	14	13	11	21	3	0	527	6	14	9	0	0	29	1	25	4	0	0	0	1	2	33
MUSSEL SHELL (grams)	2103	3954	2466	574	121	130	432	426	29	21	10256	1578	3135	1968	193	9	6883	249	7000	294	18	1	1		3	7566

TABLE 18. Continued

	Provenience and Recovery Method																											
	199N208E (1/4" wet)												199N209E (1/4" wet)												186N206E (hand)			
	1	2	3	4	5	6	7	8	9	10	11	Total	1	2	3	4	5	6	7	8	9	10	11	Total	1	2	3	Total
MAMMALS																												
White-tailed Deer																												
(Odocoileus virginianus)		10	10		1						1	22		3	3	4	2		3					15	2			2
cf. white-tailed deer																												
cf. pig (Sus scrofa)																												
Artiodactyls (Artiocactyla)																												
Raccoon (Procyon Lotor)															1									1				
Rabbit (Sylvilagus sp.)			2									2		1										1				
Gray Squirrel (Sciurus carolinensis)																												
Fox Squirrel (Sciurus niger)																												
Squirrel (Sciurus sp.)																												
Opossum (Didelphis virginiana)																												
Beaver (Castor canadensis)														1										1				
Dog (Canis familiaris)																												
Rodent (Rodentia)																												
Unidentified small mammalia		2										2		3										3				
Unidentified med. mammalia																												
Unidentified large mammalia	3						1					4													2			2
Unidentified mammalia														6										6				
REPTILES																												
Mud & Musk Turtle (Kinosternidae)														1										1				
Musk Turtle (Sternotherus sp.)																												
Pond Turtle (Chrysemys sp.)																												
cf. pond turtle																												
Dox Turtle (Terrapene sp.)																												
cf. box turtle																												
Softshell Turtle (Trionys sp.)	1	1										2	1			2						1		4				
Unidentified Turtle (Celonia)	18	65	21	1	4		1		1			111		3	16	4								23	1		1	2
Common snakes: Colubrids (Colubridae)														3										3				
Vipers (Sprpentes)			1									1																
Snakes (Serpentes)		1				1						2			2									2				
BIRDS																												
Turkey (Meleagris gallopavo)																												
Unidentified	2	10	4								1	17			6	1								7				
AMPHIBIANS																												
Salamander (Urodela)																												
Frog/toad (Anura)																												
FISH																												
Bowfin (Amia calva)														1	1									2				
cf. bowfin																												
Freshwater Catfish (Ictalurus sp.)																												
cf. freshwater catfish																												
Drumfish (Aplodinotus grunniens)		1										1		5										5				
Gar (Lepisosteus sp.)						1						1			1									1				
Unidentified bony fish (Osteichthyes)		6	2			1						9				1								1				
MISCELLANEOUS UNIDENTIFIED BONE	35	180	30	7								252	85	299	33	25	4		2	1			1	450	30	1		31
TOTAL ELEMENTS	59	276	70	8	5	3	2	0	1	0	2	426	86	326	63	35	6	0	5	1		1	1	524	35	1	1	37
MUSSEL SHELL (grams)	1477	5227	666	44	38	7	3	2	1	1	2	7468	673	2940	477	507	35	6	48			1		4687	2010	169	26	2205

TABLE 18. Continued

	Provenience and Recovery Method																															
	186N207E (flotation)						*186N208E (1/4" dry)*							*186N209E (1/4" wet)*										*187N206E (1/2" dry)*					
	1	2	3	4	5	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	9	Total	1	2	3	4	5	Total
MAMMALS																													
White-tailed Deer																													
(Odocoileus virginianus)			1			1	5	4	3			1	13	4									4	4					4
cf. white-tailed deer																													
cf. *pig (Sus scrofa)*																													
Artiodactyls (Artiocactyla)																													
Raccoon (Procyon Lotor)		1	1			2																							
Rabbit (Sylvilagus so.)							1						1	1									1						
Gray Squirrel (Sciurus																													
carolinensis)	1					1																							
Fox Squirrel (Sciurus niger)																													
Squirrel (*Sciurus sp.*)							1						1																
Opposum (Didelphis virginiana)																													
Beaver (Castor canadensis)								1					1																
Dog (Canis familiaris)																													
Rodent (Rodentia)																													
Unidentified small mammalia																													
Unidentified med. mammalia																													
Unidentified large *mammalia*	2					2																							
Unidentified mammalia	3					3			1				1																
REPTILES																													
Mud & Musk Turtle																													
(Kinosternidae)	3					3								4									4						
Musk Turtle (Sternotherus sp.)																													
Pond Turtle (Chrysemys sp.)																													
cf. pond turtle																													
Box Turtle (Terrapene sp.)																													
cf. box turtle														1									1						
Softshell Turtle (Trionys sp.)							1						1	4									4						
Unidentified Turtle (Celonia)	12	3			2	17	75	2			1		78	9									9	1					1
Common snakes: Colubrids																													
(Colubridae)	3					3								1									1						
Vipers (Crotalinae)	2	1				3																							
Snakes (Serpentes)	2					2	5						5	2									2						
BIRDS																													
Turkey (Meleagris gallopavo)							1						1																
Unidentified							10				1		11																
AMPHIBIANS																													
Salamander (Urodela)																													
Frog/toad (Anura)			1			1	1						1																
FISH																													
Bowfin (Amia calva)																													
cf. bowfin																													
Freshwater Catfish																													
(Ictalurus sp.)	1					1																							
cf. freshwater catfish																													
Drumfish (Aplodinotus grunniens)	2					2		1					1	1									1						
Gar (Lepisosteus sp.							2						2	1									1						
Unidentified bony fish																													
(Osteichthyes)	3	2				5	5	1					6	1									1						
MISCELLANEOUS UNIDENTIFIED BONE	315	3	1	2		321	120	2					122	357	3		3		3	1			367						
TOTAL ELEMENTS	349	10	4	2	2	367	227	11	4	0	2	1	245	386	3	0	3	0	3	1	0	0	396	5	0	0	0	0	5
MUSSEL SHELL (grams)	5454	185	24	1	2	5666	6705	278	56	30	96	20	7185	7954	29	2	4		10		1	2	8002	2068	25	59		19	2171

TABLE 18. Continued

	Provenience and Recovery Method																							
	187N207E (1/2" wet)							187N208E (1/4" wet; 1/16" on Table 25)							187N209E (1/4" wet)									
	1	2	3	4	5	6	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	Total	GRAND TOTAL
MAMMALS																								
White-Tailed Deer (Odocoileus virginianus)	1						1								6								6	210
cf. white-tailed deer																								4
cf. pig (Sus scrofa)																								1
Artiodactyls (Artiocactyla)																								1
Raccoon (Procyon Lotor)																								6
Rabbit (Sylvilagus sp.)															1								1	23
Gray Squirrel (Sciurus carolinensis)																								10
Fox Squirrel (Sciurus niger)																								2
Squirrel (Sciurus sp.)																								11
Opossum (Didelphis virginiana)																								5
Beaver (Castor canadensis)																								3
Dog (Canis familiaris)															1								1	2
Rodent (Rodentia)																								4
Unidentified small mammalia								1						1										22
Unidentified med. mammalia																								7
Unidentified large mammalia						1	1																	32
Unidentified mammalia								3						3										55
REPTILES																								
Mud & Musk Turtle (Kinosternidae)																								128
Musk Turtle (Sternotherus sp.)																								3
Pond Turtle (Chrysemys sp.)								4						4										51
cf. pond turtle																								6
Box Turtle (Terrapene sp.)															2								2	10
cf. box turtle																								4
Softshell Turtle (Trionys sp.)	1						1	6						6	4								4	87
Unidentified Turtle (Celonia)								4	1					5	17								17	651
Common snakes: Colubrids (Colubridae)								1						1										31
Vipers (Crotalinae)																								6
Snakes (Serpentes)															5								5	57
BIRDS																								
Turkey (Meleagris gallopavo)																								9
Unidentified																								95
AMPHIBIANS																								
Salamander (Urodela)																								2
Frog/toad (Anura)																								4
FISH																								
Bowfin (Amia calva)								1						1										6
cf. bowfin											1			1										1
Freshwater Catfish (Ictalurus sp.)															1								1	6
cf. freshwater catfish																								2
Drumfish (Aplodinotus grunniens)									1					1	3								3	31
Gar (Lepisosteus sp.)								1						1		1							1	16
Unidentified bony fish (Osteichthyes)	1						1								2	1							3	90
MISCELLANEOUS UNIDENTIFIED BONE	4					1	5	176	4	1	4	2		187	352	6							358	5,587
TOTAL ELEMENTS	7	0	0	0	0	2	9	197	6	1	5	2	0	210	394	8	0	0	0	0	0	0	402	7,281
MUSSEL SHELL (grams)	2897	81	78	9	24		3089	5680	164	41	39	44	1	5969	8783	29	1	1			1	1	8816	228,737

TABLE 19. FAUNAL SPECIMENS FROM FEATURES

	Archaic Features			Late Gulf Formational Features					Miller II Features			Possible Miller II Features			Miller III Features														Mississippian Features												
	18	75	132	7n	100	103	135	136	44	46	54	125*	101*	110*	4*	11	13	28*	83	84*	84+	86	83	96	105	112	120	123	1*	3	5*	15*	31	35	55	66	73	74	85	87#	99*
MAMMALS																																									
White-tailed Deer (Odocoileus virginianus)									21		1	2	1			2		13		145	65	8		2				6	1		2	1			7	2	1				1
Raccoon (Procyon lotor)													2	1						19								2			1					1	1				
cf. raccoon												1																													
Rabbit (Sylvilagus sp.)									9							1				15															1				1		
Gray Squirrel (Sciurus carolinensis)									1			3		1		1				17																1		1			
Opossum (Didelphis virginiana)						2			13					2						25				1							2				1						
Bobcat (Lynx rufus)																				2																					
Beaver (Castor canadensis)																																			1						
Dog (Canis familiaris)									1											1																					
Rodent (Rodentia)																				6																					
Cougar (Felis concolor)																				1																					
Carnivore (Carnivora)																				2																					
Unidentified small mammalia								1	12		6	4		1		1		5		40									2		1							2	1		1
Unidentified med. mammalia													2							2									2												
Unidentified large mammalia											1	2						7		103	10						5	2			3				2	3		4		1	
Unidentified mammalia					4				13			3	5			1		1		36								2							1	3				3	
REPTILES																																									
Mud & Musk Turtle (Kinosternidae)									4			9				1		5		21		4	1					1			12				7	3					
Musk Turtle (Sternotherus sp.)																															1										
Mud Turtle (Kinosternon sp.)																																			2						
Paint Turtle (Chrysemys sp.)															1					24																					1
Box & water Turtles (Emydidae)									1																																
Box Turtle (Terrapene sp.)									3		1	1	1					2		11	2							2	1		3				6				3		
cf. box turtle												1																													
Softshell Turtle (Trionyx sp.)									7									3		54	2															4			1		1
cf. softshell turtle																				1																					
Snapping Turtle (Chelydridae)																				21	1																				
Unidentified Turtle (Chelonia)									35			9	1	3		2		1		306	14			5			1	18	1	2	17	1			1	6	2	4	2		6
Reptiles (Reptilia)									1															1																	
Common Snakes (Colubrids) (Colubridae)								1	11		2	2	3			1		1		24		1		1				2	5	1	5				2	3			1		2
Vipers (Crotalinae)									7				1					1		21					1			3			1				2						
Snakes (Serpentes)									6			6	1	1	1			3		65								1	2						1						4
BIRDS																																									
Turkey (Meleagris gallopavo)									1											60	6																				
Unidentified birds (Aves)						1														8	37	2	1												3				3		4
AMPHIBIANS																																									
Salamander (Urodela)												1	1							2											3										
Frogs & Toads (Anura)																				20																					
Toads (Bufo sp.)																												1													
Frogs (Rana sp.)																				9																		1			
FISH																																									
Sturgeon (Acipenser sp.)									2	1										178	8																				
Bowfin (Amia calva)						1			1		2	2		1	1			1		12								3	1		1		1		1	1			1		6
Freshwater Catfish (Ictalurus sp.)									1			1								4							1														
Drumfish (Aplodinotus grunniens)									1		1									29				2				1	3	1	4			1							
Gar (Lepisosteus sp.)												1		1						11							1	1		1	1								9		34
Sucker (Moxostoma sp.)																				3																					
Sunfishes (Centrarchidae)																				1																					
Unidentified bony fish (Osteichthyes)						1		1	22		8	6	7	5	4			14		196				2				1	3		8				3	4		2			23
MISCELLANEOUS UNIDENTIFIED BONE	1	1	2		25	64	1	43	1284	2	91	465	364	177	212	50	3	316	3	6386		41	6	108	7	1	31	215	194	12	289	30	10	5	79	99	25	204	112		281
TOTAL ELEMENTS	1	1	2		29	63	1	46	1457	5	113	519	389	193	219	60	3	373	3	7881	145	56	8	122	8	1	39	256	215	17	354	32	11	6	120	130	29	218	141	4	375
MUSSEL SHELL (grams)				72	6	14		69	14375	77	632	1643	6525	475	327	4220	19	16121	46	71277		131	332	1326	528	2	1385	15490	5902	580	6427	472	843	160	3654	5917	657	824	667		1562

*includes 1/4" and 1/16" screen recovery, others 1/4" only

+Bone cluster in bottom of pit

#hand recovery only

TABLE 19. Continued

	Mississippian Features (Cont.)																	
	108*	111	115a	115b	115c	115d	115e	115f	115g	115h	115j	115k	117	119	121	124*	122	126
MAMMALS																		
White-tailed Deer (Odocoileus virginianus)	1	7					1		1	1				1				1
Raccoon (Procyon lotor)																		
cf. raccoon																		
Rabbit (Sylvilagus sp.)																		
Gray Squirrel (Sciurus carolinensis)																		
Opossum (Didelphis virginiana)																		
Bobcat (Lynx rufus)																		
Beaver (Castor canadensis)																		
Dog (Canis familiaris)																		
Rodent (Rodentia)																		
Cougar (Felis concolor)																		
Carnivore (Carnivora)																		
Unidentified small mammalia		3												1				
Unidentified med. mammalia														1				
Unidentified large mammalia										1								
Unidentified mammalia								3					1					
REPTILES																		
Mud & Musk Turtle (Kinosternidae)													1					
Musk Turtle (Sternotherus sp.)																		
Mud Turtle (Kinosternon sp.)																		
Pond Turtle (Chrysemys sp.)		5																
Box & Water Turtles (Emydidae)																		
Box Turtle (Terrapene sp.)																		
cf. box turtle																		
Softshell Turtle (Trionys sp.)																		
cf. softshell turtle																		
Snapping Turtle (Chelydridae)																		
Unidentified Turtle (Chelonia)	1							1	1							1		
Reptiles (Reptilia)																		
Common snakes Colubrids (Colubridae)							1			1				1		1		
Vipers (Crotalinae)																		
Snakes (Serpentes)	1																	
BIRD																		
Turkey (Meleagris gallopavo)																		
Unidentified birds (Aves)																		
AMPHIBIANS																		
Salamander (Urodela)																		
Frogs & Toads (Anura)																		
Toads (Bufo sp.)																		
Frogs (Rana sp.)																		
FISH																		
Sturgeon (Acipenser sp.)																		
Bowfin (Amia calva)									1							1		
Freshwater Catfish (Ictalurus sp.)																		
Drumfish (Aplodinotus grunniens)										1								
Gar (Lepisosteus sp.)														1		1		
Sucker (Moxostoma sp.)																		
Sunfishes (Centrarchidae)																		
Unidentified bony fish (Osteichthyes)																1		
MISCELLANEOUS UNIDENTIFIED BONE	12	2	19	15	9	2	13	9	21	5	6	13	17	5	11	129		
TOTAL ELEMENTS	15	17	19	15	9	2	15	13	24	9	6	13	19	10	11	134		1
MUSSEL SHELL (grams)	104	6	463	110	180	81	193	213	371	70	169	57	512	83	124	16	153	

	Probable Mississippian Features							Post Archaic Features of Indeterminate Cultural Affiliation																						
	21	59	61	62	63	65	116	2	6	7	8	9	10	14	16*	17	22	23	24	25	27	30	32	36	37	38	40	41	42	43
MAMMALS																														
White-tailed Deer (Odocoileus virginianus)															1															
Raccoon (Procyon lotor)																														
cf. raccoon																														
Rabbit (Sylvilagus sp.)																														
Gray Squirrel (Sciurus carolinensis)																														
Opossum (Didelphis virginiana)																														
Bobcat (Lynx rufus)																														
Beaver (Castor canadensis)																														
Dog (Canis familiaris)																														
Rodent (Rodentia)																														
Cougar (Felis concolor)																														
Carnivore (Carnivora)																														
Unidentified small mammalia																														
Unidentified med. mammalia																														
Unidentified large mammalia																														
Unidentified mammalia																														
REPTILES																														
Mud & Musk Turtle (Kinosternidae)																														
Musk Turtle (Sternotherus sp.)														1																
Mud Turtle (Kinosternon sp.)																														
Pond Turtle (Chrysemys sp.)																														
Box & Water Turtles (Emydidae)																														
Box Turtle (Terrapene sp.)																														
cf. box turtle																														
Softshell Turtle (Trionys sp.)																														
cf. softshell turtle																														
Snapping Turtle (Chelydridae)																														
Unidentified Turtle (Chelonia)																														
Reptiles (Reptilia)																					2									
Common snakes Colubrids (Colubridae)																														
Vipers (Crotalinae)																														
Snakes (Serpentes)																														
BIRD																														
Turkey (Meleagris gallopavo)																														
Unidentified birds (Aves)	1		1																											
AMPHIBIANS																														
Salamander (Urodela)																														
Frogs & Toads (Anura)																														
Toads (Bufo sp.)																														
Frogs (Rana sp.)		2																												
FISH																														
Sturgeon (Acipenser sp.)																														
Bowfin (Amia calva)																														
Freshwater Catfish (Ictalurus sp.)																									1					
Drumfish (Aplodinotus grunniens)																														
Gar (Lepisosteus sp.)																														
Sucker (Moxostoma sp.)																														
Sunfishes (Centrarchidae)																														
Unidentified bony fish (Osteichthyes)																														
MISCELLANEOUS UNIDENTIFIED BONE	3	3	10	1	3	1						5	2		10		3	1		1					1	2			1	1
TOTAL ELEMENTS	4	5	11	1	3	1						5	2	1	11		3	1		1	2				2	2			1	1
MUSSEL SHELL (grams)	85	45	11	1	17		5	1	141	154	45	1026	29	60	261	1	168	4	37	2	36	141	3	21	27	22	111	26		116

TABLE 19. Continued

	Post Archaic Features of Indeterminate Cultural Affiliation (Cont.)																											
	47	48	53	54	56	58	67	69	71	76	79	80	81	82	90*	91	95	97	98	104	106	107	109	113	114	118	141	Grand Total
MAMMALS																												
White-tailed Deer (Odocoileus virginianus)					5																							300
Raccoon (Procyon lotor)																												27
cf. raccoon																												1
Rabbit (Sylvilagus sp.)																												27
Gray Squirrel (Sciurus carolinensis)																												25
Opossum (Didelphis virginiana																												46
Bobcat (Lynx rufus)																												2
Beaver (Castor canadensis)																												1
Dog (Canis familiaris)																												2
Rodent (Rodentia)															1		28											30
Cougar (Felis concolor)																												1
Carnivore (Carnivora)																												3
Unidentified small mammalia																												81
Unidentified med. mammalia																												7
Unidentified large mammalia																											5	149
Unidentified mammalia					2																							89
REPTILES																												
Mud & Musk Turtle (Kinosternidae)															1							1						73
Musk Turtle (Sternotherus sp.)																												1
Mud Turtle (Kinosternon sp.)																												2
Pond Turtle (Chrysemys sp.)																												31
Box & Water Turtles (Emydidae)																												1
Box Turtle (Terrapene sp.)					1																							39
cf. box turtle																												1
Softshell Turtle (Trionys sp.)																												72
cf. softshell turtle																												1
Snapping Turtle (Chelydridae)																												22
Unidentified Turtle (Chelonia)																												445
Reptiles (Reptilia)																												2
Common snakes Colubrids (Colubridae)					1										1													74
Vipers (Crotalinae)																												37
Snakes (Serpentes																												92
BIRD																												
Turkey (Meleagris gallopavo)																												67
Unidentified birds (Aves)																												59
AMPHIBIANS																												
Salamander (Urodela)																												7
Frogs & Toads (Anura															5													25
Toads (Bufo sp.																												1
Frogs (Rana sp.															1													11
FISH																												
Sturgeon (Acipenser sp.																												189
Bowfin (Amia calva													1															40
Freshwater Catfish (Ictalurus sp.																												9
Drumfish (Aplodinotus grunniens																												44
Gar (Lepisosteus sp.																												62
Sucker (Moxostoma sp.																												3
Sunfishes (Centrarchidae																												1
Unidentified bony fish (Osteichthyes															4		4							1				327
MISCELLANEOUS UNIDENTIFIED BONE	[illegible]		[illegible]	2	6	4	1						7	1	169		33			1				7	2	2		11807
TOTAL ELEMENTS	[illegible]		2	2	15	4	1						8	1	182		65			1		1		8	2	2	5	14336
MUSSEL SHELL (grams)	23			128	90	233	19	1	27	16	7	63	576	74	28	11	19	10	67	10	6	32	2	289	39	40	182	172712

quantity of each from features which contained identifiable shells. For the majority of features all shells recovered were analyzed but for those which contained extermely large quantities, sizeable samples were analyzed. The sampled features include Features 28 (25% of 16,121 grams), 44 (50% of 14,375 grams), 84 (30% of 73,277 grams), and 123 (50% of 15,490 grams). The size of the sample drawn from each feature depended on the proportion of identifiable shells within the total mass of shells and fragments. For example, only 25% of Feature 28 was analyzed because most of the total mass was identifiable while 50% of Feature 44 was analyzed because so much of the total mass consisted of unidentifiable fragments.

As discussed in Appendix D, 28 species of mussel shells were identified from the Kellogg features, the vast majority of which occupy habitats other than exclusively mud bottoms and pool areas. The numerically highest species counts (a total of 6,287, or 88.5%) were Elliptio crassidens, Elliptio arcus, Epioblasma penita, Pleurobema decisum, and Quadrula asperata, all of which exclusively or partially inhabit sand/gravel substrate, often in swift moving water. As such, most if not all of these species were probably collected from the river rather than in stillwater sloughs and natural lakes. It follows, therefore, that most of these shells were probably collected during dry periods of the year when lower water levels would have made the shells more accessible. The species which inhabit mud bottom substrate in pool areas have a numerical count of only 28 (Lasmigona complanta and Tritogonia verrucosa). These shells could have been collected from stillwater, but could just as well have been collected from deep, muddy bottomed areas of the river. Of course, these shells would not have been as easily collected as those which inhabit the shallow, gravel/sand bottomed parts of the river, a circumstance which may account for their small quantity in the features. Various species among the remaining 783 identified mussels presently occupy a variety of habitats which would have been available in the river, creeks, or natural lakes of the

area, but the reasons for their low quantities in the collections analyzed was probably due to one or more variables, such as low species population size or non-selection by the Kellogg inhabitants.

Following is a list of the species identified from the features along with the habitat type of each (see Appendix D for sources).

Amblema plicata - Occurs in all substrates except shifting sand

Elliptio arctatus - Various substrates

Elliptio crassidens - Various substrates

Elliptio arcus - Various substrates

Epioblasma penita - Swift current over sand/gravel substrate

Fusconaia ebena - Sandy bottom

Fusconaia cerina - Sandy bottom

Lampsilis teres - Sandy bottom

Lampsilis straminea claibornensis - Mud, sand, gravel bottom

Lampsilis ornata - Mud, sand, gravel bottom

Lasmigona complanata - Mud bottom, pool areas

Ligumia recta - Gravel bottom in strong current

Obliquaria reflexa - Swift current over gravel, sand, or hard mud substrate

Obovaria jacksoniana - Slow moving water

Obovaria unicolor - Slow moving water

Plagiola lineolata - Sand/gravel substrate

Pleurobema decisum - Swift current over sand/gravel substrate

Pleurobema perovatum - Swift current over sand/gravel substrate

Pleurobema taitianum - Swift current over sand/gravel substrate

Quadrula apiculata aspera - Sand/gravel substrate

Quadrula asperata - Sand/gravel substrate

Quadrula metanevra - Sand/gravel substrate

Quadrula rumphiana - Sand/gravel, mud bottom

Quadrula stapes - Swift current over sand/gravel substrate

Tritogonia verrucosa - Mud bottoms, deep pools

Truncilla donaciformis - Sand and gravel substrate

Uniomerus tetralasmus - Mud bottom in shallow water

Villosa lienosa - Various habitats

Over 21,600 mammal, bird, reptile, fish and amphibian bones and unidentified fragments were recovered from features and general levels at the Kellogg site, along with 402,430 grams (883 lbs.) of mussel shells. Bone preservation was excellent in the post-Archaic deposit and features but relatively few bones were present in the Archaic deposit and all but three of the 13 Archaic features were void of bones. This circumstance, however, is likely a result of poor preservation for most of the specimens which did occur in the Archaic levels and features had been subjected to fire, thereby enhancing their preservation. It should also be pointed out that those 1 m squares on Table 18 which show unusually high bone counts in the lower levels of the deposit contained deep Mississippian burials, which probably accounts for the high bone counts in those squares in that (1) the burial pits were not always detected until several 10 cm levels had been removed and (2) in some cases the exact boundaries of the graves may not have been defined during their excavation, resulting in remnant burial fill being included in the general levels excavated following removal of the skeletons. The unusually high shell weights in the lower levels of those squares may be attributed to the same set of circumstances. However, Squares 196N206E and 196N207E, which did not contain burials, also show unusually high shell weights in the lower levels. In any case, the more intense use of shellfish at the site appears to have been during post-Archaic times, as evidenced by the dense concentrations in the upper levels. The possibility exists, however, that shells in the lower levels did not preserve as well as in the upper levels.

The various species identified encompass nearly all the common fauna that inhabit the area today and a few that were once common but have been recently crowded out by the encroachment of man. The bear, an animal that inhabited the area until about 100 years ago or so, is not represented among the identified faunal specimens but at least

one cougar has been identified. Perhaps the most unusual faunal species identified is Atlantic sturgeon, a salt-water fish that travels up freshwater streams to spawn. As far as can be determined the sturgeon scutes from Kellogg, by which the species was identified, are the first found in an archaeological context on the Central and Upper Tombigbee River and there appears to be no record of the fish being observed as far up the river as the Kellogg site in modern times. The fish, in fact, is now considered an endangered species, primarily because of overkill by commercial fishermen (Clemmer 1980, personal communication).

The Atlantic sturgeon grows to a very large size. For example, one caught in 1902 measured eight feet, ten inches (2.7 m) in length and four feet, eight inches (ca. 1.4 m) in circumference. In 1939 a specimen six feet (ca. 1.8 m) in length and weighing 225 lbs. was caught in the Strong River in South Mississippi and one of equal length caught nearby a few years earlier in the Pearl River at Rockport, Mississippi, provided the primary food for 75 people at a fish fry (Cook 1959:50). Based on the size of the scutes recovered from Feature 84 at Kellogg, that particular specimen (assuming only one specimen is represented) is estimated to also have been about 1.8 m in length (Clemmer 1980, personal communication).

The bulk of the diversified assemblage of faunal specimens identified could be assigned with confidence to only a few of the specific cultural components. The scattering of bone from the Archaic levels (in general Levels 3-12 in Block 1 and Levels 2-10 in Block 2) includes a predominance of unidentifiable fragments. The few identified bones from the Archaic levels include deer, rabbit, various species of turtle, various species of fish, rodent, snake, turkey, raccoon, and beaver.

The post-Archaic deposit yielded examples of all the faunal species listed on Table 18 but assignment of specimens to specific cultural groups was impossible because of the mixed nature of the deposit. An exception to this, however, is the one pig specimen recovered which undoubtedly is a product of the 19th century occupation discussed

below. Certain features that could be assigned to specific prehistoric post-Archaic cultural groups have provided identifiable bone, as shown on Table 19 and discussed below.

The five Late Gulf Formational features yielded opossum, snake, bowfin, and unidentified mammal, bird, and fish specimens. Mussel shells were present in all but one of the Gulf Formational features.

The three Miller II features at Kellogg yielded a considerably larger number and variety of faunal specimens than did the Late Gulf Formational features and include deer, rabbit, gray squirrel, opossum, dog, carnivore, various species of turtle, snake, turkey, sturgeon, bowfin, catfish, drumfish, and mussel shells. The three possible Miller II features listed on Table 19 add raccoon, salamander, and gar to the assemblage but the uncertainty of the cultural affiliation of these features prohibits anything more than a tentative Miller II association for these species.

The 13 Miller III features reflect a continuation of pronounced diversity of animal species utilization at the Kellogg site. In addition to the species mentioned above from Miller II features, rodent, cougar, fox, bobcat, frog, toad, and sunfish specimens were present in Miller III features. All of the Miller III features contained mussel shells and some features possessed large quantities. Feature 84, for example, contained 73,277 grams of mussel shells along with 8,026 bone specimens and provided the best data on Miller III subsistence at the site. A common riverine mammal conspicious by its absence in both Miller II and Miller III features at Kellogg was beaver.

The 25 Mississippian features and seven probable Mississippian features yielded a faunal assemblage similar to the Miller II and III features. Notably different, however, was the absence of identified turkey and sturgeon in all of the Mississippian features. While it was absent in the Miller II and III features, beaver was represented in the Mississippian features by one specimen. Mussel shells were recovered from all but three Mississippian features and in quantities that appear to reflect a similar degree of use as in the Miller II

and III occupations. However, some of the mussel shells, as well as animal bone, in the Mississippian features could have been a product of the earlier occupations and were accidental inclusions in the feature fills.

The 54 post-Archaic features of indeterminate cultural affiliation, many of which were small post holes, contained a total of only 155 animal bones, 48 of which were identifiable. The identified species represented include deer, rodent, turtle, snake, and fish. Mussel shells were present in all but three of these features.

Pollen

Five soil samples from the Kellogg site were analyzed for pollen. Three of the soil samples were obtained by pushing medicine vials into the freshly shaved profile of the outside wall of the Block 1 backhoe trench. The vials were immediately capped and labeled. These samples were taken at 10 cm intervals in a straight vertical column. For analysis, however, combinations of the resulting 13 vials were necessary because of the too-small size of each vial. Thus Sample 1 consisted of three vials of soil taken between 10 and 30 cm, Sample 2 consisted of five vials taken between 40 and 80 cm, and Sample 3 consisted of five vials taken between 90 and 130 cm. Sample 1 was from the post-Archaic deposit, Sample 2 was from the Archaic deposit, and Sample 3 was from the extreme bottom of the deposit and the underlying sterile clay. Sample 4 consisted of a block of soil removed from the interior of the fill within a Mississippi Plain jar (Plate 28) found with Burial 7, and Sample 5 consisted of a block of soil taken from the fill of Burial 19, an Archaic cremation. In addition, a control soil sample was taken from the humus in an unoccupied area about 150 meters from the site.

The report of the results of the pollen analysis is included herein as Appendix C. Data included in the appendix is utilized below in a short discussion of the environmental implications indicated by the pollen and other data. The pollen data is presented on Table 20.

Only one of the five samples, Sample 3, contained pollen grains.

Table 20. Identified Pollen from Sample 3

Provenience	Quantity	Percentage
Non-aboreal types		
Ambrosia-type	12	6.0
High Spine	17	8.5
Low Spine	32	16.0
Gyamineae	24	12.0
Cheno Am	9	4.5
Total	94	47.0
Aboreal Types		
Pinus	39	19.5
Quercus	21	10.5
Carya	2	1.0
Liquidambar	3	1.5
Ostrya-Carpinus	2	1.0
Salix	3	1.5
Alnus	2	1.0
Ulmus	3	1.5
Celtis	3	1.5
Juniperus	7	3.5
Total	85	42.5
Other		
Solanum	17	8.5
Unknown	4	2.0
Total	21	10.5

As noted above, this sample was takem from the cultural deposit/sterile clay transition zone at the bottom of the Block 1 wall profile. Since an adjusted radiocarbon date of 4860 B.C. was obtained on a feature originating in the lowest part of the cultural deposit, the pollen should be at least that old, assuming that the date is fairly accurate. It is interesting that no pollen was preserved in Sample 2, taken immediately above Sample 3. This could be an indication that all the preserved pollen in Sample 3 was actually present in the sterile soil. If so, the pollen could significantly pre-date the initial occupation of the site. In any case, the pollen identified has revealed notable data on the environmental conditions of the area at or before about 6000 years B.P.

As discussed in Appendix C, the 200 pollen grains present in Sample 3 are almost evenly divided between arboreal and non-arboreal plants, suggesting that the site area was either cleared or that clearings were nearby. Natural clearings were quite common in the Prairie proper when the first Europeans arrived but natural clearings in the floodplain would not likely have existed. However, the period of time under consideration was so much earlier that modern conditions cannot be relied upon. All that can be said is that the pollen grains identified seem to indicate that at least some clearing was present, either before or after initial occupation, or both, and that the clearings could have been either natural, man-induced, or both.

In Appendix C it is suggested that the arboreal types represented by the pollen grains and the low quantity of Cheno-am pollen indicate drier conditions than today. The presence of pine pollen in significant quantities (19.5%) is suggested as a possible good indicator of such drier conditions. Areas frequently affected by fires, as they would be during dry periods, would have supported more pine growth, for fires tend to maintain pine stands while surpressing oak-hickory invasions (Shelford 1963:56). In this regard it is interesting to note that only two (1%) hickory pollen grains were present in the sample, while 21 (10.5%) oak pollen grains were present. As discussed above and in Appendix B, the quantities of hickory nut and acorn

remains recovered from the lower cultural deposit were quite small but gradually increased to significant quantities in the Late Archaic deposit. It is possible that the corresponding low quantity of oak-hickory floral remains and pollen grains in the bottom of the deposit are evidence that drier conditions did indeed exist at the time, thereby greatly reducing the oak and hickory in the bottomlands. The absence of tupelo gum (Nyssa sp.) in the pollen sample could lend support to this hypothesis, for this tree thrives only in very wet environmental conditions and is common in the area today. As noted in Appendix C, pines are more prolific pollen producers than oaks and hickories, so the above correlations between oak-hickory pollen quantities in the sample and the oak-hickory floral remains recovered may not be significant.

However, the above floral and pollen data pointing toward possible dry conditions during the initial site occupations are supported by studies conducted in the Southeast. These studies indicate that the period from about 6000 B.C. to about 3000 B.C. (known as the Altithermal or Hypsithermal) was characterized by warmer temperatures and drier conditions than during the preceeding or following periods (Wright 1976). The apparent decrease in human habitation of northeast Arkansas during the Middle Archaic, for example, has been attributed to a decrease in mast-bearing trees during the Altithermal (Morse 1969; Fehon 1975), an hypothesis possibly supported by the above evidence from the Kellogg site.

Radiocarbon Dates

A total of 18 samples from the Kellogg site were submitted to the Center for Applied Isotope Studies at the University of Georgia. Seventeen of the samples consisted of wood charcoal and one consisted of burnt mussel shells. Because some of the charcoal samples were too small, only 10 radiocarbon dates were obtained (Table 21), and the small size of some of these resulted in large standard deviations.

In Table 21 the dates obtained are listed by sample number, material type, radiocarbon age, and solar calendar age. For the two B.C.

Table 21. Radiocarbon dates from the Kellogg site.

Provenience	Sample No.	Material	Years B.P.	B.C./A.D.	Corrected
Feat. 34	UGa-2755	Charcoal	5980±105	4030±105 B.C.	4860±121 B.C.
Feat. 136	UGa-2767	Burned Shell	2710±70	760±70 B.C.	922±86 B.C.
Feat. 44	UGa-2754	Charcoal	1170±205	A.D. 780±205	
Feat. 84	UGa-2759	Charcoal	1170±430	A.D. 780±430	
Feat. 88	UGa-2761	Charcoal	1160±85	A.D. 790±85	
Feat. 21	UGa-2762	Charcoal	1380±395	A.D. 570±395	
Feat. 94	UGa-2758	Charcoal	880±120	A.D. 1070±120	
L.4, Sq. 196N 206E	UGa-2763	Charcoal	1045±205	A.D. 905±205	
Bu.7 (charcoal inside jar)	UGa-2766	Charcoal	1540±340	A.D. 410±340	
Feat. 65	UGa-2764	Charcoal	765±90	A.D. 1185±90	
		Data obtained in 1974 (see Blakeman 1975)			
Feat. 6	UGa-910	Charcoal	755±70	A.D. 1195±76	

dates obtained dendrochronological calibration has been figured, using Damon and others (1974:350-366), in order to arrive at more accurate calendrical dates. The dates calibrated include only the B.C. dates for several reasons. First, the differences between standard dates and calibrated dates are quite large before A.D. 1 and therefore adjustment is more important. The later A.D. dates, ranging between A.D. 410 and A.D. 1195, however, do not significantly deviate from the standard when calibrated. The post-A.D. 1000 dates, for example, deviate no more than about 10 years and the A.D. 500 to 1000 dates deviate no more than about 20 years. These dates would have been adjusted also if it were not for the inclusion in the narrative below of un-calibrated comparative dates from other sites and other sources. Thus, for consistency and comparability all A.D. dates discussed below, whether from Kellogg or elsewhere, are un-calibrated.

The earliest in situ Archaic component discovered at Kellogg is represented by several pit features which originated near the base of the cultural deposit. An attempt was made to date this occupation by submitting two charcoal samples, one from Burial 19, a human cremation, and one from Feature 34, a shallow basin-shaped pit. Unfortunately, the sample from Burial 19 was not large enough to yield a date, although dating was attempted at the Isotope Studies lab. The sample from Feature 34, however, yielded a very satisfactory date of 4860±121 B.C. (calibrated). Like Feature 34, Burial 19 and several other pit features originated near the base of the cultural deposit and all were probably fairly contemporary. As discussed in the artifact section above, diagnostic lithics found associated with this early component include a bannerstone (Plate 17), a square drilled gorget (Plate 18), and a side-notched projectile point (Plate 6c). A third charcoal sample was submitted in an attempt to date the latest Archaic occupation but this sample obviously consisted of intrusive charcoal from the Late Woodland or possibly Mississippian occupations. Recovered from the general midden in Level 4 of Square 196N206E, this sample yielded a date of A.D. 905±205.

Perhaps the most interesting date from Kellogg is that of 760±70

B.C. (corrected to 922±86 B.C.), obtained on burned mussel shells associated with the partial Alexander Incised vessel found in Feature 136. Although a date on charcoal would have been preferred to one on mussel shells (see Michels 1973:161), the date is significant in that it is the first obtained on Alexander ceramics in the Tombigbee River-Tennessee River region. Moreover, the only other radiocarbon date obtained anywhere on Alexander ceramics is from the Tchefuncte site (Ford and Quimby 1945) in the Lower Mississippi Valley. Alexander ceramics at that site occur as a minority type in the Pontchatrain phase of the Tchula period. A Pontchatrain phase standard radiocarbon date obtained from deer antler at the Tchefuncte site is 250±110 B.C. (Phillips 1970:957).

In the Upper and Central Tombigbee Valley the Henson Springs phase, which is primarily identified on the basis of full-blown Alexander pottery manufacture, has previously been estimated to date between about 500 B.C. and 100 B.C. (Jenkins 1975). At the Cofferdam site a calibrated date obtained on charcoal from a large pit containing both Alexander and Wheeler ceramics was 2150±226 B.C. (Blakeman, Atkinson, and Berry 1976:107, 109) but this date would appear to be much too early, at least for the Alexander pottery. It is perhaps significant, however, that both the Kellogg and Cofferdam dates are earlier than 500 B.C. Only the acquisition of more Henson Springs phase radiocarbon dates will clarify the present uncertainties regarding the Alexander pottery temporal span.*

In an attempt to date the Miller II component at Kellogg a charcoal sample was submitted from Feature 94, which was suspected to be of Miller II affiliation on the basis of the small ceramic assemblage present (see Table 21). The radiocarbon date obtained of A.D. 1070±120, however, is much too late. Either the date is wrong or the feature actually had a Late Woodland or Mississippian affiliation and all the sherds present were intrusive. Feature 44, a pit which had a

*Subsequent to the receipt of the Kellogg date and preparation of this chapter, an uncalibrated date of 400±75 B.C. was obtained from a single component Alexander site, 40Hr100 in Hardin, County, Tennessee (Dye 1980, personal communication).

ceramic assemblage similar to that supposedly diagnostic of Late Miller II (Jenkins 1979:260), yielded charcoal which dated to A.D. 780±250. This date may be a little too late if Jenkins' estimate of A.D. 450-600 for Late Miller II is correct. Other Upper and Central Tombigbee Valley radiocarbon dates recently obtained on features interpreted to be of Late Miller II affiliation include A.D. 560±75, A.D. 715±90 (O'Hear and Conn 1978:39-40, 43), A.D. 420±170, A.D. 490±50, and A.D. 680±75 (Jenkins 1979:39).

Feature 84 at Kellogg appears to fit Jenkins' (1979:263-266) ceramic assemblage for Early Miller III (see Table 7), which he estimates to date between A.D. 600 and A.D. 900. A radiocarbon date obtained on charcoal from Feature 84 was A.D. 780±430. The credibility of this date is, of course, damaged by the large standard deviation. Regardless, however, Feature 84 indeed would appear to date at least as early as A.D. 780 since not a single whole or fragmented Madison point so typical of full-blown Miller III was recovered, although the entire feature was window screened. Although possible, it is highly unlikely that a feature 4 m long, 1 m wide, and 1.2 m deep would not have contained a single example of the Madison point if the type were in use.

Other radiocarbon dates recently obtained on features interpreted to be of Early Miller III affiliation include A.D. 760±55, 730±50, 910±55, and 910±50 (Jenkins 1979:39). Also at Kellogg a radiocarbon date of A.D. 790±85 was obtained on charcoal from Feature 88, a very small pit that contained a Miller III ceramic assemblage too small to allow speculative placement in early, middle, or late context. Feature 88 contained no Madison points but this is not significant considering the small size of the pit. It is interesting to note in this regard that the only features excavated at Kellogg which contained Madison points were of Mississippian affiliation.

Of the four dates obtained for the Mississippian occupation at Kellogg, two are acceptable and two are unacceptable. One unacceptable date, obtained on charcoal from inside the Mississippi Plain jar (Plate 28) found with Burial 7, was A.D. 410±340. This date is disappointing and difficult to explain. The second unacceptable date,

A.D. 570±395, was obtained on charcoal from Feature 21, a small pit containing corn cupules, pine cones, and nut shells. Although the only sherd in the pit was Baytown Plain, the presence of maize indicates a likely Mississippian affiliation. However, Feature 21 might possibly be Miller III; if so the radiocarbon date would not be so out-of-line. The other two dates, on the other hand, are quite satisfactory and fall nicely into the time span estimated for the Moundville I period (A.D. 1000-1250; see Steponaitis 1978). One of the dates, A.D. 1195±76, was obtained following the 1974 testing (Blakeman 1975: 95-96). This date was obtained from a charcoal sample recovered from a deep post hole which contained a large rim sherd of Moundville Incised, variety Moundville (Plate 29). The other date, A.D. 1185±90, was obtained recently on charcoal recovered from Feature 65, a pit which contained a large quantity of charred corn cobs. As mentioned above, a date of A.D. 1070±120 was obtained from Feature 94, which had been suspected to be a Miller II pit but in reality may have had a Mississippian affiliation.

Mention should be made here of two other Mississippian dates obtained several years ago from other nearby sites. The Barnes Mound (22Lo564), located just south of the Columbus Lock and Dam, had a Mississippian component for which a radiocarbon date of A.D. 1185±60 was obtained on charcoal from a Mississippian pit (Blakeman 1975:96-97, 184). The Mississippian ceramics recovered at the Barnes Mound consisted of Moundville I types and the radiocarbon date obtained seems to confirm this chronological placement for the occupation at that site. The Coleman Mound (22Lo507) is located about 35 km farther south. There Rucker (1974:34, 56) obtained a radiocarbon date of A.D. 1265±105 on charcoal from a fire basin situated on top of the next to last building stage of the approximately 4 m high temple mound.

Recently a series of radiocarbon dates for the Gainesville Lake has been received (Jenkins 1979:39) but no Moundville I or II dates were obtained. However, four dates were obtained on Terminal Miller III (Gainesville phase) features. These four Gainesville phase dates were A.D. 1030±55, A.D. 1030±55, A.D. 1030±55, and A.D.

1240±80. A single Moundville III date obtained in the Gainesville Lake area was A.D. 1410±45 (Jenkins 1979:39).

In summary, the radiocarbon dates and associated cultural materials indicate that the Kellogg site was primarily occupied prehistorically between about 4900 B.C. and A.D. 1200, beginning in the Middle Archaic period and ending during the Moundville I period. Additional Mississippian radiocarbon dates from other nearby sites indicate that those also were occupied during the Moundville I period and that at least one of the several temple mounds located south of Columbus was begun and mostly completed during Moundville I.

Summary and Conclusions

The ecofactual data recovered from the Kellogg site are informative in regard to several aspects, including subsistence endeavors, seasonality of occupations, environemtnal conditions, and several specific cultural activities. Discussions of artifacts made from animal bones and shells have been presented above in another section and will not be repeated here, but it should be kept in mind that the cultural activities indicated by the bone awls, antler projectile points, antler flakers, bone gouge, shell gorgets, and shell beads directly relate to the utilization of living organisms.

As discussed above in the sections on flora, fauna, pollen, and soil tests, informative data on subsistence activities at the site have been obtained. The floral and pollen data strongly indicate that hickory nuts and acorns were probably the two most important plant foods collected by Archaic inhabitants, at least during the latter part of the period. The degree of utilization of mast bearing trees may have varied during the Archaic, however, as possibly indicated by the pollen data obtained from the earliest Archaic occupation deposit. As discussed above, the low quantities of oak-hickory pollen and the higher quantities of pine pollen may be an indication that dry conditions existed at that time and that the oak-hickory forest was greatly reduced relative to earlier and later times. This

possibility is supported by the low quantities of oak-hickory nuts in the lower portion of the deposit and a systematic increase from the lower levels to the higher levels of the Archaic deposit.

As discussed in Appendix C, the apparent presence of nightshade (Solanum) pollen in Sample 3 may indicate that this plant was utilized as food. Several species of nightshade are edible but the exact species of this shrubby plant could not be determined from the pollen grains.

During post-Archaic times hickory nuts and acorns continued to be important plant foods but walnuts, persimmons, and grapes appear to have been supplemental dietary items. The association of maize remains with only features definitely identified as Mississippian indicates that this cultigen had probably become the mainstay of the diet by that time but the presence of hickory nuts and acorns in significant quantity reflects a continuation of intense utilization of these protein-producing plant foods.

The presence of small pits containing concentrations of burned corn cobs, pine cones, and nut shells indicates a cultural activity not directly associated with subsistence. These features are interpreted to be "smudge pits," probably associated with hide smoking (Binford 1967) and/or pottery smudging (Munson 1969). Although the definite cultural associations of eight of the nine smudge pits could not be determined, most or all were probably affiliated with the Mississippian occupation.

The faunal specimens recovered from Kellogg indicate that hunting of mammals and birds, collecting, fishing, and probably trapping of mammals, birds, and fish were other subsistence activities that were important during most or all of the prehistoric occupation span. It is difficult to determine whether such activities were more intense during one cultural occupation than another because of three factors, differential preservation, differential population size, and trash disposal variations (on-site pit disposal as

opposed to surface dumping on or off-site). Based strictly on quantity and variety of the faunal contents of features, however, there does seem to be greater emphasis on faunal utilization during the Miller II and III periods. This circumstance could be a result of the apparent population increase during these periods (Blakeman 1975, 1976). Faunal subsistence may not have been as intense during the Mississippian occupation because of apparent full-blown maize agriculture, but shellfish collecting at least seems to have continued to be a significant activity.

As is often true of faunal material recovered from prehistoric archaeological sites, the few complete long bones from Kellogg were confined to small animals. Breakage of bones undoubtedly sometimes resulted from butchering or from dogs gnawing and breaking them, but most or all of the deer bones, for example, were probably intentionally smashed in order to splinter them and expose the edible marrow (see Gilbert 1973 for a discussion of this activity). The splintered bones also could have been boiled in water in order to obtain bone grease, for when fresh, greasy bones are boiled fat rises to the top where it can be collected (Gilbert 1973).

Seasonality of occupation by the various cultural groups that utilized the site can be at least partially deduced from the ecofactual data. Since the nuts of hickory, oak, and walnut trees become mature in the fall, occupation during the fall and at least early winter seems fairly certain, for remains of one or more of these nuts were recovered in association with all the cultural components identified. The two wild grape specimens recovered, one from a Miller III feature and one from a Mississippian feature, also indicate fall occupation for grape is a fall maturing fruit. Persimmon, remains of which were found in Miller II, Miller III, and Mississippian features, is also a fall maturing wild fruit. The immature pinecones and nuts recovered from one Miller III feature and several Mississippain features indicate a late summer or early fall gathering time, for pinecones drop their mature nuts during the fall and winter.

The foregoing plant foods recovered that are available only in the fall and winter do not necessarily mean that the site was unoccupied during other seasons of the year for some plant foods available during other seasons do not preserve well and would be less likely to appear in the archaeological record. Charred hickory nut and walnut shells, for example, are very dense and are less likely to disintegrate, whereas a charred, non-dense squash seed would stand a much lower chance of surviving natural and man-related destruction processes, including archaeological recovery. At Kellogg, therefore, non-recovery of plants available in the spring and summer does not rule out occupation during these seasons. Moreover, some edible non-seed plants available in the spring and summer, such as tubers, greens, buds, and shoots, would leave no archaeological record in an open site such as Kellogg. There is, in fact, some floral evidence that summer use of the site may have occurred, at least during the Mississippian occupation as evidenced by the presence of maize and possibly the immature pinenuts. If so, other summer plants such as squash and beans were probably consumed also.

The faunal specimens recovered also provide valuable data on seasonality and indicate occupation other than fall and early winter. The presence of mussel shells in association with all cultural components, especially the post-Archaic components, strongly indicates summer and fall occupation when collecting conditions in the river would have been best because of the lower water levels resulting from the presumably drier conditions of those seasons. In regard to the Late Miller II and the Miller III occupations, definite post-winter utilization of the site is indicated by the presence of sturgeon, a salt-water fish which travels up freshwater streams in the spring and early summer to spawn (Cook 1959:50; Larson 1980:114). Some of the numerous deer bones from Feature 84, a large Miller III pit containing sturgeon, were from immature animals, but since detailed aging studies were not conducted, age at death and subsequently time of year at death cannot be postulated. Hickory nuts and/or acorn remains were found in the Miller II and III features containing sturgeon, but these could have resulted from storage.

The ecofactual data has also provided some insight into past environmental conditions of the site environs. As discussed above in regard to the pollen analysis, both arboreal and open conditions are suggested by the pollen grains present in the sample from the lowest portion of the cultural deposit. The recovery of deer, turkey, and rabbit bones also indicates that the site was located near the open areas. These animals do not favor habitats consisting of exclusively wooded terrain because of the limitations there on grass seeds, tender vines, and other foliage more available in open areas. Such open areas probably did not occur in the Tombigbee floodplain but quite likely existed within a reasonable hunting range of the site within the Black Prairie proper where open grasslands are noted in the first European accounts of the area. Other identified faunal species, such as fish, turtle, beaver, snake, and raccoon, indicate a typical riverine environment such as the immediate area is today.

VIII. THE HISTORIC OCCUPATION

During the 1974 testing, evidence of a historic period non-Indian occupation was discovered (Blakeman 1975:39). Although no features or intact structural components were found, a number of historic artifacts such as bricks, sherds, nails, etc. were recovered in the top 20 cm of all the test units. During the major excavation more such artifacts were recovered but again, no features or intact structural components were encountered. The artifacts found indicate that a wooden house, possibly made of logs, had been constructed on the site during the 19th century. Mr. Lloyd C. Kellogg, the last landowner prior to government acquisition, was consulted but he had no recollection of or information about a house on the site (Kellogg 1978, personal communication). Neither did an elderly ex-tenant farmer who has resided in the area all his life and who used to farm the property. Thus the occupation probably had terminated by 1900 or perhaps a few years later.

The historic material recovered at Kellogg in both 1974 and 1978 is tabulated on Table 22. Of the three typical classes of ceramics used by archaeologists (earthenware, stoneware, and porcelain) only earthenwares are present in the Kellogg collection. Earthenwares are characterized by a soft, porous paste resulting from a low firing temperature. These ceramics include both coarse paste and fine paste types. There is one example of coarse earthenware (thick, utilitarian ware of various paste colors) and 19 examples of fine earthenware (usually thin with a fine-grained paste and more often representing tableware).

The coarse earthenware sherd has a red paste and displays the neck and partial handle of a jug. It possesses a brown glaze on the exterior and a gray glaze on the interior. Such ceramics have a widespread spatial and temporal occurrence and are quite useless for site dating purposes.

The fine earthenwares from Kellogg include two types, pearlware and whiteware. Pearlware, a white paste, clear glaze ceramic, was

TABLE 22 . HISTORIC ARTIFACTS

ARTIFACT TYPE	186N207E-L.1	186N209E-L.1	196N208E-L.1	196N209E-L.1	197N206E-L.2	197N208E-L.1	198N206E-L.1	198N209E-L.1	199N206E-L.1	199N207E-L.2	199N208E-L.1	199N209E-L.2	202N197E	Grader Cut 1	Surface	1974 Testing	TOTAL
Ceramics																	
Pearlware																	
Hand painted (blue floral)			1														1
Transfer print (flow blue)																1	1
Whiteware																	
Hand painted floral (green and red)	1																1
Hand painted (blue and brown)			1													1	2
Hand painted (blue)																1	1
Hand painted (blue floral)																3	3
Hand painted (blue rim)											1						1
Hand painted (blue dots)																1	1
Hand painted (green)										1							1
Transfer print (brown)							1						1				2
Yellow slip														1		1	2
Undecorated		1														1	2
Coarse Earthenware															1		1
TOTAL	1	1	2				1			1	1		1	1	1	10	20
Brick Fragments								6								13	19
Metal																	
Cut nails			1	2	1	1			1		1	3		1		8	19
Wire nails																1	1
One-half of a chain link			1														1
Shotgun shell base: "No. 12, American Eagle"				1											1		2
Shotgun shell base: "No. 12 REM-UMC Shurshot"																1	1

introduced in 1779 (Godden 1965:xxi). Under normal conditions pearlware can be distinguished from whiteware by the bluish tint of the glaze on the former. The tint is caused by the addition of cobalt to the glaze. The manufacture of pearlware is believed to have generally ceased about 1830 (Sussman 1977:110) but its presence at Kellogg does not serve as evidence that the historic occupation began that early; wares are often kept for many years before becoming broken and discarded.

Whiteware is distinguishable from pearlware by a pure white paste and a totally transparent lead glaze without the bluish tint. This ware was introduced in 1820 and continued in production well into the 20th century (South 1977:211).

The same decorative techniques were used on both pearlware and whiteware, several of which are represented in the Kellogg collection. There are three examples of underglaze transfer printing, 12 examples of underglaze hand painting and two examples of underglaze slip decoration. One of the transfer printed sherds is known as "flow blue", a variation in transfer printing which caused a soft, fuzzy appearance.

Most of the historic artifacts from Kellogg indicate a probable mid to late 19th century time frame and their relatively infrequent occurrence indicates a limited occupation period. All but one of the nails recovered are the machine headed cut type which was introduced about 1815. The iron fibers run lengthwise on the Kellogg specimens rather than parallel with the head, a characteristic of machine headed cut nails made after 1840 (Nelson 1968). The single wire nail recovered may not have been associated with the occupation. However, the wire nail is believed to have come into general use in the late 19th century and therefore the Kellogg specimen could have resulted from repair work or new construction during the occupation.

The three metal shotgun shell bases are relatively modern (they still retain part of the paper casing) and probably resulted from an apparent skeet shoot held at the site. A total of 18 clay pigeon fragments (not tabulated on Table 22) were recovered in the general

excavations, 14 in Block 1 and four in Block 2. This sporting event probably occurred during the 1950's or earlier.

The brick fragments recovered are the hand made type. They were molded by hand in small frames, usually at rural scove kiln operations. Bricks in rural areas were hand made throughout most of the 19th century (see Atkinson and Elliott 1978).

As mentioned above, the types of fine ware ceramics recovered were all being manufactured during the 19th century. With the exception of pearlware, none can be used to refine the temporal range of the occupation. The pearlware sherds may have been made during the first three decades of the 19th century and kept for several more decades before they were broken and discarded. The absence in the collection of shell edged ware, a very common type in the first half of the 19th century, indicates that the occupation began sometimes after 1850, possibly not until after the Civil War.

IX. RECOVERY TECHNIQUE COMPARISON

Over the years North American professional archaeological recovery techniques have evolved from hand recovery only to screen filtration of various types. That filter screens will be used in professional archaeological excavation is more or less taken for granted in modern day scientific archaeology. Moreover, smaller and smaller screen mesh sizes have come to be utilized since the general practice of screen recovery began. No longer are most archaeologists and sponsoring agencies satisfied with simple dirt filtration through a single screen size such as 1/4". Also the use of water screens is generally much preferred over dry screens, with more frequent use of the technique dependent on the proximity of a water supply.

The shortcomings of using only a single screen size (1/4" or larger) have been cogently demonstrated by recent studies. Thomas (1969) demonstrated how the utilization of a screen size no smaller than 1/4" significantly biased faunal element recovery in regard to mammals of different sizes and Morse and Morse (1977) carried Thomas' study further by demonstrating differential recovery of faunal material, ceramics, lithics, fired clay, shell, and charcoal. Morse and Morse (1977:Chapter 7, p. 13) conclude in regard to their findings at the Zebree site using 1/2", 1/4", 1/8", and 1/16" mesh screens:

> Relatively few identifiable ceramic artifacts . . .passed through either 1/4 or 1/8 inch mesh, although the figures do indicate that fairly considerable quantities occur between 1/2 and 1/4 inches in size. For most other classes of artifacts it is evident that a substantial proportion of the total site assemblage not only passes through 1/4 inch mesh, but also through 1/8. In particular for lithics, charcoal, and other clay almost as much or more material passes through 1/8 inch mesh as is caught by it. The figures for shell, bone, and fired red clay show a similar, although less pronounced pattern, with 26%, 20% and 37% of the sample totals respectively, passing through the 1/8 inch mesh.

As discussed in Chapter III of this report, a variety of recovery techniques were also employed at the Kellogg site for the purpose of

quantifying and comparing data retrieved. The Kellogg investigations serve to confirm the findings of Morse and Morse (1977) in regard to differential recovery of cultural material.

At Kellogg the screen sizes utilized were 1/2", 1/4", and 1/16" (window screen). In addition, a 500 micron mesh was used with the flotation device discussed in Chapter III. The Kellogg approach was different from that of Morse and Morse (1977) in that a 1/8" mesh was not used and both dry and wet screening were conducted with the 1/2" and 1/4" sizes. Figure 4 shows the recovery technique used on each 1 x 1 m square.

Tables 23 through 26 show the results of the various mesh size recovery endeavors. Table 23 shows the results of the hand recovery technique utilized in addition to square-to-square comparisons of all six recovery techniques for Levels 1 and 2 in Block 2. The six techniques were also used in Block 1 but it was felt that data from the smaller Block 2 would be more comparable considering its smaller area. The results from Block 1, however, were basically similar to those from Block 2. The Scope of Work did not require utilization of different mesh sizes in the same 1 x 1 m units; rather it specified square-to-square comparisons. This shortcoming was recognized before the excavations began so the soil from both of the 1/16" water screen squares was first filtered through 1/4" screens and the material from the two mesh sizes were kept separate. Table 24 shows the results of the 1/4" and 1/16" differential recovery in Levels 1 and 2 of Square 187N208E of Block 2. The soil in other squares that was filtered through the 1/2" or 1/4" screen meshes was not passed through screens of other sizes so no intra-unit comparisons can be made in these cases.

In regard to faunal recovery comparison, a 10 percent sample of the bones recovered from all levels by the 1/16" screens used on Squares 187N208E and 198N209E was analyzed and is compared in Table 25 to the faunal material caught in the 1/4" mesh used on the same two squares. The bone count reflected on this table for the 1/16" recovery consists of the numerical count from the 10 percent sample multiplied by 10. The 1/4" bone count on Table 25 is the actual

Table 23. Recovery Technique Comparison of Squares in Block 2.

Artifacts	Level 1							Level 2							
	187N* 208E 1/16"W	187N 209E 1/4"W	186N 208E 1/4"D	187N 207E 1/2"W	187N 206E 1/2"D	186N 206E Hand	Total Level 1	187N 208E 1/16"W	187N 209E 1/4"W	186N 208E 1/4"D	187N 207E 1/2"W	187N 206E 12"D	186N 206E Hand	Total Level 2	Total Levels 1 and 2
Lithics															
Projectile points/knives	2	5	0	0	0	4	11	0	0	0	0	0	0	0	11
fragments	0	0	5	0	2	0	7	0	0	0	0	0	0	0	7
Finished biface tools	2	3	2	0	2	1	10	1	0	0	0	0	0	1	11
unfinished	0	1	3	5	3	0	12	0	0	0	0	0	0	0	12
Bifaces	0	0	0	0	0	0	0	1	0	0	0	1	0	2	2
fragments	3	5	4	0	0	1	13	0	0	0	0	0	0	0	13
Preforms	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Cores	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
Flakes	519	366	271	54	43	133	1386	106	12	15	6	9	10	158	1544
Shatter	214	13	7	3	4	6	247	197	16	1	2	1	0	217	464
Ground sandstone fragments	10	6	10	3	4	12	45	7	3	2	8	4	8	32	77
Hammerstones	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Ground hematite	0	0	0	0	1	0	1	0	0	0	0	1	1	2	3
Hematite fragments	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	751	401	303	65	59	157	1736	312	31	18	16	16	19	412	2148
Sandstone fragments	303g	217g	158g	221g	27g	109g	1035g	183g	43g	8g	93g	72g	52g	451g	1486g
Limestone fragments	13g	23g	17g	17g	0	0	70g	8g	0	0	0	0	0	8g	78g
Pebbles	2023g	2261g	2130g	994g	1199g	1240g	9847g	810g	566g	492g	343g	254g	578g	3053g	12,900g
Fire-cracked rocks	1774g	1467g	1545g	1318g	1094g	919g	8117g	950g	627g	375g	829g	644g	630g	4055g	12,172g
Ceramics+															
Fiber temper	0	1	1	0	0	0	2	0	0	0	0	0	0	0	2
Sand temper	135	204	154	41	50	31	616	0	1	0	0	0	6	7	623
Grog temper	94	163	202	25	47	49	580	0	6	1	0	0	2	9	569
Shell temper	58	112	84	10	17	25	306	0	1	4	0	0	1	6	312
Bone temper	2	1	0	2	2	2	9	0	0	0	0	0	0	0	9
Total	290	481	441	78	116	107	1513	0	8	5	0	0	9	22	1535
Fired clay fragments	103g	63g	56g	43g	90g	17g	377g	92g	69g	40g	36g	54g	48g	339g	716g
Faunal															
Shell	6380g	8783g	6705g	2897g	2068g	2010g	28,843g	177g	29g	278g	160g	25g	169g	838g	29,681g
Animal Bones	1667•	294	107	7	5	35	2215	236	8	11	0	0	1	256	2471

* Consists of 1/4" material actual count plus a 20 percent sample of 1/16" material multiplied by 5
• Consists of 1/4" material actual count plus a 10 percent sample of 1/16" material multiplied by 10
+ Includes all sherds recovered

Table 24. Comparison of 1/4" and 1/16" Water Screen Recovery in Levels 1 and 2 of Square 187N208E

Artifacts	Level and Screen Size			
	Level 1-1/4"	Level 1-1/16"	Level 2-1/4"	Level 2-1/16"
Lithics				
Projectile points/knives	2	0	0	0
Finished biface tools	2	0	1	0
Bifaces	0	0	1	0
Biface fragments	3	0	0	0
Preforms	1	0	0	0
Flakes	223	296	11	95
Shatter	17	197	2	195
Ground sandstone fragments	10	0	7	0
Sandstone fragments	290g	13g	180g	3g
Limestone fragments	12g	1g	7g	1g
Fired clay fragments	103g	0	87g	5g
Pebbles	1960g	63g	692g	118g
Fire-cracked rocks	726g	48g	946g	4g
Ceramics				
Sand temper	28*	108+	0	0
Grog temper	31*	63+	0	0
Shell temper	14*	44+	0	0
Bone temper	2*	0+	0	0
Faunal				
Shell	5680g	700g	165g	13g
Animal bones	197	1470	6	230

*Caught in 1/2" screen in the lab
+Total sherds which passed through 1/2" screen

number recovered, for each individual bone was examined from that screen mesh.

Also in regard to faunal materials, Table 26 shows a comparison of bones caught in both 1/4" and 1/16" screens from several selected features. Although total soil from nearly all features was filtered through both 1/4" and 1/16" screens, analysis of both mesh recoveries were only conducted on those sample features listed on Table 26. Again, the 1/16" screen material was 10 percent sampled and the numerical count reflected on the table is a multiplication by 10. Also on Tables 25 and 26 are tabulations of the identified elements from the 1/16" screens, the purpose of which is to show which classes and species of animals tend to be under-represented if a screen smaller than 1/4" is not utilized. Following is a discussion of this and other aspects of the recovery technique data as shown on the above mentioned tables.

Lithic Recovery

In regard to differential lithic recovery between large screen sizes and smaller screen sizes, Tables 23 and 24 show significant contrasts among several types of artifacts. As would be expected, there is no increase in the 1/16" screens of tools, bifaces, preforms, cores, hammerstones, ground sandstone, etc. since these artifacts are nearly always larger than 1/2" in size. Smaller lithic debitage, however, shows a significant numerical or weight increase in the 1/16" screens. For example, on Table 23 which shows the square-to-square comparison, 153 more flakes were caught in the 1/16" screen in Level 1 than in the next numerically nearest recovery square, the 1/4" wet square, and 465 more were recovered than in the 1/2" wet square. Similar recovery ratios are obvious in Level 2. Shatter, consisting of small irregular pieces of chert, is also represented in much higher quantity in the 1/16" squares than in the others. Of interest is the fact that more of these two types of debitage were recovered by hand than were recovered in the 1/2" screens.

Although the square vs. square data on Table 23 has questionable credibility because of the lack of comparability, its evidence is

supported by Table 24, which shows a separation of the 1/4" and 1/16" material recovered from Levels 1 and 2 of Square 187N208E. In Level 1, 57 percent of the total flakes (519) was caught in the 1/16". For shatter, 92 percent of the total in Level 1 was caught in the 1/16" mesh and 99 percent of the total in Level 2 was caught in the 1/16" mesh. Flakes and shatter are the only two lithic categories that are better represented in 1/16" screens but, as can be seen on Table 24, significant quantities of fire-cracked pebbles and whole pebbles were caught by the 1/16" mesh.

In regard to wet vs. dry screening, the only evidence available for scrutiny is that on Table 23, the square-to-square comparison. In Level 1, flakes from the 1/4" wet mesh are numerically predominant by 95 over flakes from the 1/4" dry mesh but in Level 2 the 1/4" dry flake count is larger by three over the 1/4" mesh. For 1/2" screens the wet square flake count in Level 1 is larger by 11 over the dry square and in Level 2 the 1/2" dry flake count is larger by three over the 1/4" wet square. Since Level 1 consisted of a much larger sample of flakes in all squares in Block 2, the evidence from that level is more credible. Thus it would appear that more flakes are recovered by water screening than by dry screening. This, of course, has long been believed among archaeologists and has been attributed to the forcing of small flakes through the screens in pressing the clodded dirt by hand so that it will pass through the screens.

Ceramics Recovery

As also determined by Morse and Morse (1977) at the Zebree site, very few identifiable sherds small enough to pass through 1/2" mesh were recovered at Kellogg. However, the temper group (fiber, sand, grog, shell, or bone) was usually determinable for the sherds smaller than 1/2". On Table 23 all sherds recovered in Levels 1 and 2 of the six different recovery technique squares are listed by temper group and on Table 24 all sherds recovered in Square 187N208E are listed by temper group.

As shown on Table 23, fewer sherds wer caught in Levels 1 and 2 of the two 1/16" screen squares than were caught in the 1/4" screen

squares. At first this seems inconsistent with the lithic data where more flakes were caught in the 1/16" screen squares than in the larger screens, but the explanation is simple. Only a very few of the sherds listed under the 1/16" screen size were actually small enough to pass through the 1/4" screen and into the 1/16" screen. That fewer sherds were present in the 1/16" screen square than in the 1/4" screen square can be attributed to the presence of a small portion of a burial pit in that square, thus reducing the volume of dirt actually screened in Levels 1 and 2. However, comparative ceramic recovery data between the 1/2" and 1/4" screen square does show on Table 23, for the 1/2" screen recovery in Level 1 produced from five to 10 times fewer sherds than did the 1/4" screen squares. As with the flakes and shatter discussed above, hand recovery produced more sherds than did the 1/2" wet screen and almost as many as the 1/2" dry screen. In Level 2, hand recovery produced more sherds than did the 1/4" wet and 1/4" dry screens. Level 2, however, was actually the top of the Archaic zone and the few scattered sherds in that level were small and had probably percolated down through root holes or other disturbances.

The ceramic temper group tabulations on Table 24 for the 1/4" and 1/2" screen recovery in Levels 1 and 2 of Square 187N208E actually represent those sherds larger than 1/2" and those smaller than 1/2", for the lab size sorting process in preparation for analysis was conducted before the 1/4" screen sherds were counted. Still, the tabulation offers insight into the quantity of sherds that would be lost if only a 1/2" screen were utilized in screening. From two to four times fewer sherds in the temper listing would have been recovered if only a 1/2" mesh had been used.

The variations in ratios between 1/2" and larger sherds and the smaller than 1/2" sherds of the separate temper groups shed some light on differential breakage. For example, on Table 23 the ratio of small (less than 1/2") to big (1/2" and up) sand tempered sherds is approximately 4:1 and for shell tempered sherds it is approximately 3:1. For grog tempered sherds, however, the ratio is only 2:1. This might indicate that grog tempered ceramics at Kellogg were more durable than sand

or shell tempered sherds and that sand tempered ones were more durable than shell tempered ones.

Faunal Material Recovery

Perhaps the most striking contrasts at Kellogg from one recovery technique to another are displayed by animal bone. The presence of numerous unidentifiable small bone fragments contributed greatly to increased numerical counts in the small screens but significant numbers of identifiable elements were also present that contributed to a more representative picture of faunal utilization. The glaring differences in quantities of animal bones recovered in the six technique squares of Block 2 on Table 23 is remarkable. For example, the 1/16" screen recovery in Level 1 produced 1273 more bones and fragments than did the next numerically nearest recovery square, the 1/4" wet square, and a similar ratio occurred in Level 2. The bone count descrepancy between the 1/4" and 1/2" screen squares was even more pronounced, however, with the 1/4" wet square in Level 1 producing 394 bones and the 1/2" wet square in Level 1 producing only seven bones. Again the 1/2" screen was least effective, for 35 bones were collected in the hand recovery square in Level 1. The total weight of shell in Level 1 of the 1/16" square was less than that in the 1/4" wet square but each of these squares produced from two to three times as much shell as did the 1/2" wet screen square. In Level 1, the 1/2" screens produced a little more shell than did the hand recovery square and more shell and bone was recovered by the 1/4" and 1/2" wet screening than by the 1/4" and 1/2" dry screening.

This greatly increased efficiency of the 1/16" screen in producing animal bone is supported by Table 25, which compares 1/4" and 1/16" recovery in all levels in each of two squares, 187N208E in Block 2 and 198N209E in Block 1. For every level in each square the 1/16" screen recovery is substantially higher than for the 1/4" screen. The same holds true for all but three of the 16 features listed on Table 26.

Tables 25 and 26 give a good indication of the classes and species of animals that are more likely to be under-represented if a screen smaller than 1/4" is not utilized. On Table 25 the identified

Table 25. Faunal Recovery Comparison between 1/4" and 1/16" Screens in All Levels of Squares 187N208E and 198N209E and Identified Elements among the 1/16" Mesh Material

Screen size	187N208E									198N209E										
	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8	9	10	Total
1/14"	197	6	1	5	2	0	0	0	211	150	144	134	37	14	13	11	21	3	0	527
1/16"*	1470	230	170	150	80	40	10	10	2160	2080	1720	1210	230	540	540	560	620	150	90	7740
Elements identified in 10% Samples of 1/16" Recovery																				
Unid. bony fish	1	1	1	1		1			5	3	1	2	1	1	1	3				12
Snake									0	2		4								6
Gray squirrel	1								1											0
Mud/musk turtle									0			1								1
Unid. small mammals									0		1				1					2
Unid. mammals	1								1	1										1
Total	3	1	1	1		1			7	6	2	7	1	1	2	3				22

*10 percent sample multiplied by 10

Table 26. Faunal Recovery Comparison between 1/4" and 1/16" Screens in Certain Features and Identified Elements among the 1/16" Mesh Material

Screen size	Features															
	1	4	5	15	28	44	84	94	96	99	101	103	108	110	124	125
1/4"	39	10	181	26	147	574	3200	18	42	72	67	6	10	19	5	98
1/16"	178	210	173	6	226	883	4798	95	80	305	322	65	5	174	129	422
Elements Identified from 1/16" Recovery																
Unidentified bird							2					1				
Bowfin	1		1			1	6	2		6		1		1		2
Drumfish	3		1				22	1	2							
Catfish						1										
Gar										19				1	1	1
Unidentified fish	3	4	6		13	16	137	8	1	14	6	1		5	1	2
Box turtle							1									
Mud/musk turtle																1
Unidentified turtle	1		2				17							2	1	1
Snake	7	1	1		3	16	63	2		5	2		1	1	1	6
Unidentified reptile									1							
Frogs/toads							20									
Salamander			1				2				1					
Gray squirrel						1	9									3
Rabbit						8	7									
Oppossum						6	3		1					2		
Raccoon			1													
Rodent							1									
Unid. small mammal	2		1		4	12	29	6		1				1		4
Unid. medium mammal	2															
Unidentified mammal						11	6				3					1
Total	19	5	14	0	20	72	325	19	5	45	12	3	1	13	4	21

bones from the 1/16" screen 10 percent samples consist primarily of bony fish and snake, with gray squirrel, mud/musk turtle, unidentified small mammal, and unidentified mammal also represented. On Table 26, identified animals from the 1/16" screen samples consist primarily of identified and unidentified bony fish, snake, unidentified small mammal, turtle, unidentified mammal, frogs/toads, and a few other small to medium sized animals. Surprisingly, only three bird bones are included but it is quite clear that small bone elements from small animals are more likely to pass through a 1/4" screen, thereby biasing the sample if a smaller screen is not also utilized.

Conclusion

In conclusion, the comparative analysis of the Kellogg recovery techniques indicates conclusively that a screen size no larger than 1/4" should be used on most, if not all, archaeological sites in the Tennessee-Tombigbee Multi-Resource District. One-half inch screens are by far too large and result in tremendous loss of cultural material as does hand recovery which fares only slightly better. Although charcoal recovery has not been figured in the above study, almost none is captured by 1/2" screens. Although 1/16" mesh captures nearly everything of significance save perhaps tiny seeds which should be left to flotation, it is felt for reasons discussed below that an intermediate screen size, namely 1/8" mesh, would be the ideal size for complete water-screening of soil in each excavation level. However, a sample of each level in each excavation unit should also be screened through 1/16" mesh. The latter can easily be accomplished in conjunction with flotation where the receptacle tub has a 1/16" mesh bottom, which is usually the case. Features also would best be screened through 1/8" mesh with the flotation sample residue left in the 1/16" tub serving as a sample for that mesh size.

The reasons why 1/8" mesh is recommended as the basic screen size stems directly from problems arising from the use of 1/4" and 1/16" mesh at Kellogg. Although 1/4" mesh captures the larger bones and more diagnostic lithic and ceramic materials, the loss of tremendous quantities of flakes and other material is quite detrimental to a

comprehensive view of lithic technology and also can affect the determination of specific activity areas on a site. The use of 1/8" mesh and a 1/16" mesh sample would also eliminate the acquisition of a tremendous bulk of 1/16" material that defies complete analysis under time and funding constraints so often imposed. At Kellogg, where features and two complete squares were filtered through 1/16" mesh, the resulting bulk was so large that it was practical to analyze only 10 or 20 percent samples. It is quite likely that a 1/8" screen would have caught most of the identifiable animal bones and most of the flakes that were recovered at Kellogg in the 1/16" screens.

In regard to flotation, which has not specifically been addressed in this chapter, the use of a flotation device similar to the one used at Kellogg and described in Chapter 111 is recommended. Level and feature samples should be floated rather than entire squares, for this procedure is too time consuming and adds little or no value to the floral data acquired.

X. SUMMARY AND CONCLUSIONS

The archaeological investigations at the Kellogg Village site have revealed a considerable quantity of both new and supplementary data on most of the prehistoric cultures of the Upper-Central Tombigbee River Valley. The Kellogg data combined with that already acquired during past investigations and that being acquired through investigations in progress at the time of this writing should place the upper half of the Tombigbee River Valley among one of the archaeologically best understood river basins in the country. Refinement of the data will, of course, continue as a result of future specialized studies and further site investigations. Some cultures of the valley are not as well understood as others and future investigations hopefully will focus attention on them. The Archaic and Early Woodland periods deserve the most intensive scrutiny. The on-going investigations by the University of West Florida have the potential to contribute considerably to our understanding of these two periods. The recent but incompletely reported investigations in the Gainesville Lake by the Universities of Alabama and Michigan should contribute in particularly to our understanding of the Middle to Late Woodland and Mississippian periods, as well as the poorly understood post-De Soto to A.D. 1700 era. The contributions of the Kellogg site in regard to the cultural components present are briefly described below.

Middle to Late Archaic

These periods of the Archaic are characterized as a time when wandering but centrally-based people were engaged in subsistence endeavors dictated by the various resources available for exploitation in a given area. Most sites were probably not inhabited year around because of the unavailability at any one place of all the exploitable subsistence resources that existed within the macro-environment in which the people lived. The Kellogg Archaic data do not contradict this accepted hypothesis of Archaic settlement patterns and the evidence

acquired, primarily floral data, indicates that the occupations may have occurred only in the late fall and early winter.

Other data were obtained at Kellogg that has either added to or confirmed identified Archaic period cultural traits. Middle Archaic flesh burial was first identified in this area at the Vaughn Mound site (Rucker 1974; Atkinson 1974) and further substantiated at the Barnes Mound site (Blakeman 1975), but the cremation at Kellogg (Burial 19) was apparently the first instance of this method of burial discovered on the Upper and Central Tombigbee for Middle Archaic times. Moreover, the presence of grave goods with the cremation remains is a strong indication of religion-related reverence for the dead. Evidence of this had been discovered earlier at the Vaughn Mound site, where grave goods accompanied one of the burials (Atkinson 1974). Exotic lithic materials such as chert, quartzite, and siltstone from Kellogg indicate inter-areal trade connections, as does a marine shell ornament found with a burial at the Vaughn Mound site (Atkinson 1974).

Data on Archaic house types was not acquired at Kellogg and remains one of the poorest documented aspects of the Archaic period. However, circular post molds were found at the East Aberdeen site (Rafferty, Baker, and Elliott 1979) and hopefully more such evidence will come to light during the present excavations by the University of West Florida.

The Gulf Formational Period

No new evidence about the early part of this period, the Broken Pumpkin Creek phase, was found at Kellogg. Fiber tempered sherds are frequently found on sites with Late Archaic components and such was the case at Kellogg. Because of this it is generally believed that little or no significant culture change from the Late Archaic is represented by the mere appearance of pottery. The fiber tempered pottery does, however, serve well as a time marker for the transition into one of the most mysterious cultures that existed in the Tombigbee Valley, the Henson Springs phase.

During the Henson Springs phase, a radical change occurred in at least one cultural aspect. The crude, plain or sometimes unpretentiously decorated fiber tempered pottery of the Broken Pumpkin Creek phase

was superceded by the most imaginatively shaped and decorated pottery to ever occur during prehistory as a majority type in the valley. The origins of this pottery and possibly the people who introduced it (if not an indigenous pottery improvement) are presently uncertain. The two vessels with six podal supports found at Kellogg apparently are the first to be found anywhere in North America and the one with six sides is also unique at present. The intricate and complicated incising displayed on that vessel and sherds from other vessels rival decorations occurring anywhere in the world at the time.

Unfortunately, little else is presently known about this period of prehistory. At Kellogg evidence from features indicates that nut and shellfish collecting was practiced but no mortuary, housing, trade connections, or other significant cultural data were acquired. However, a single radiocarbon date, 760±70 B.C. (922±86 B.C. adjusted), the first ever obtained on this cultural period, indicates that previous estimates of ca. 500 B.C. for the upper end of the phase may be too late. A more exact chronological placement of the phase awaits the acquisition of an adequate number of radiocarbon dates.

<u>Miller I</u>

This period is not well represented at Kellogg, if at all. The few sherds of Saltillo Fabric Impressed pottery, which mysteriously replaced the much more artistic Alexander pottery, may have been a product of the succeeding Miller II period, discussed below.

<u>Miller II</u>

The only significant new data acquired on Miller II concerns ceramic associations in the late part of the period. Feature 44, with its large quantity of animal bones, mussel shells, and typical Miller II sherds of Furrs Cordmarked and Baldwin Plain (along with a few sherds of Mulberry Creek Cordmarked and Baytown Plain) also contained a large section of a Marksville Incised, <u>variety</u> <u>Yokena</u> vessel. In the Lower Mississippi Valley the Issaquena phase, for which this latter [illegible] diagnostic, has been radiocarbon dated between A.D. 435 and [illegible] Phillips (1970) is not convinced that the Issaquena [illegible], all three Tombigbee radiocarbon dates

obtained from features containing variety Yokena pottery tend to support a late occurrence. The two dates from the Vaughn Mound site were A.D. 390±70 and A.D. 730±90, and the one from Feature 44 at Kellogg was A.D. 780±205.

Of the floral and faunal data perhaps the presence of sturgeon remains in Feature 44 is the most significant, for they indicate occupation in the spring as well as in the fall and early winter as indicated by the nut remains recovered. Sturgeon remains from Kellogg are discussed further below in regard to Miller III.

Miller III

The most significant Miller III data recovered appears to pertain to the early part of the period. All three of the Miller III radiocarbon dates obtained fall earlier than A.D. 800 and there is no definite evidence that the occupation extended into the latter part of the period. Perhaps the most significant information acquired on the Miller III component concerns faunal material, lithics, and ceramics. In regard to lithics, the absence of the typical Miller III triangular arrow point in all Miller III features is an indication that the type and probably the bow and arrow had not yet come into use. Their absence in Feature 84, which was 4 m in length and 1 m deep, furnished the best evidence of this. The chances of not a single arrow point being deposited in a pit that large seems extremely low if the type had been in use, but confirmation must await further research.

With regard to ceramics, the presence of two Marksville Incised, variety unspecified sherds in Feature 123 perhaps indicates that the Issaquena phase not only occurred late enough to be contemporary with Late Miller II but also Early Miller III. This possibility is supported by the fact that seven out of eight Marksville Incised sherds found in features in the Gainesville Lake were in Miller III pits (Jenkins 1979:121-123).

The most significant faunal data on the Miller III period concerns the presence of sturgeon remains in Feature 84. Although the presence of large quantities of fall-maturing nuts in the Miller III features indicates that occupation occurred during the fall and early winter,

sturgeon bones indicate a spring and early summer occupation also. In past investigations perhaps we have been overwhelmed by nut remains in arriving at seasonality of occupation simply because floral evidence for other seasons does not survive as well. The sturgeon remains provide good evidence that this is true, for without them there would be no evidence to indicate occupation other than fall and early winter. It may well be that many Miller III period sites were occupied year around.

Mississippian Period

The bulk of the data obtained on the Mississippian occupation is not unusual for that Southeastern tradition in general. However, the Kellogg investigations have contributed considerable to our understanding of the Tombigbee River manifestation of that tradition.

The Kellogg site apparently experienced an intensive and relatively short-lived occupation during Moundville I of the Mississippian period. Two radiocarbon dates obtained, A.D. 1185±90 and A.D. 1195±76, indicate this although another date with an uncertain association was A.D. 1070±120. There was no evidence of a post-Moundville I occupation and like situations occur at the few other investigated Mississippian sites along the river within 25 km distance of the Kellogg site. Two other Mississippian radiocarbon dates obtained at two of these sites (22Lo564 and 22Lo507) also fall within Moundville I. The date of A.D. 1265±105 (Rucker 1974) on the next to last building stage of the Coleman temple mound (22Lo507) indicates that this mound at least was all or mostly constructed during Moundville I. In light of this data some of the questions that need to be addressed in future research are as follows: (1) Was the construction of the four temple mounds (Butler, Coleman, and the two Chowder Springs Mounds) scattered just south of Columbus contemporary during Moundville I and later? (2) Was the Coleman Mound, which is about twice as high as the others, the central ceremonial center with the others serving as minor centers but subject to the authority at Coleman? (3) Were the Mississippian population and the ceremonial centers under the overall authority of the leadership at the large Moundville ceremonial center in Alabama

or were the Tombigbee people autonomous, at least during the initial Mississippian intrusion into the northern Mississippi-northern Alabama area? (4) Did the post-Moundville I population become greatly reduced, accounting for the seemingly few occupation sites in the area after Moundville I or did the scattered small village and farmstead populations become concentrated near the ceremonial centers? (5) Was the Lubbub Creek area and temple mound (1Pi33 and 1Pi85), where Moundville I and post-Moundville I components exist, part of the mound system located south of Columbus? (6) Likewise, how did the Lyons Bluff site and mound, located about 40 km west of the Kellogg site and which possessed post-Moundville I components, relate to the mound complex south of Columbus?

In looking at the Mississippian component data recovered at Kellogg, perhaps the discovery of round, individual post structural patterns is the most significant. Although not unknown for Mississippian sites, the circular houses found at Kellogg and also at the Lubbub Creek site (see Blitz 1980) are the first identified on the Upper and Central Tombigbee River. Other important Mississippian traits identified at Kellogg include the Following: (1) The average burial was in an oblong pit with the skeleton extended on the back although some were flexed. (2) Funerary accompaniments with some burials indicated age, sex, and status differences. (3) Burials were consistently oriented in the easterly direction. That most were oriented to the east-northeast may indicate that orientations were directly related to the place on the horizon at which the sun rises; if so, most individuals were buried in the summer for the sun rises in the east-northeast during that season. (4) Maize cultivation was very important for subsistence and was supplemented by hunting/trapping/collecting of mammals, birds, fish, and shellfish. (5) The site was probably occupied at least during the summer, fall, and probably part of the winter as indicated by the floral material recovered. (6) The people were apparently participating in a trade network extending south to the Gulf coast and for undetermined distances to the north, east, and west.

PLATES

Plate 1. The Kellogg Village site; view from the west.

Plate 2. The Kellogg Village site excavations; view from the north.

Plate 3. Block 1

Plate 4. Block 2

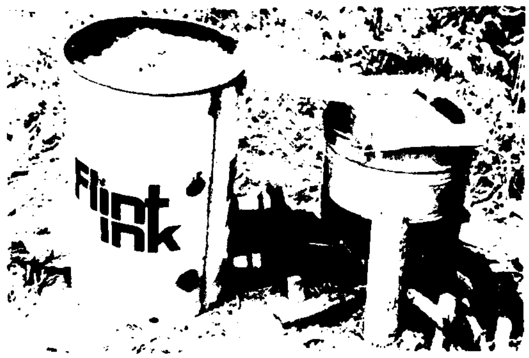


Plate 5. The flotation apparatus

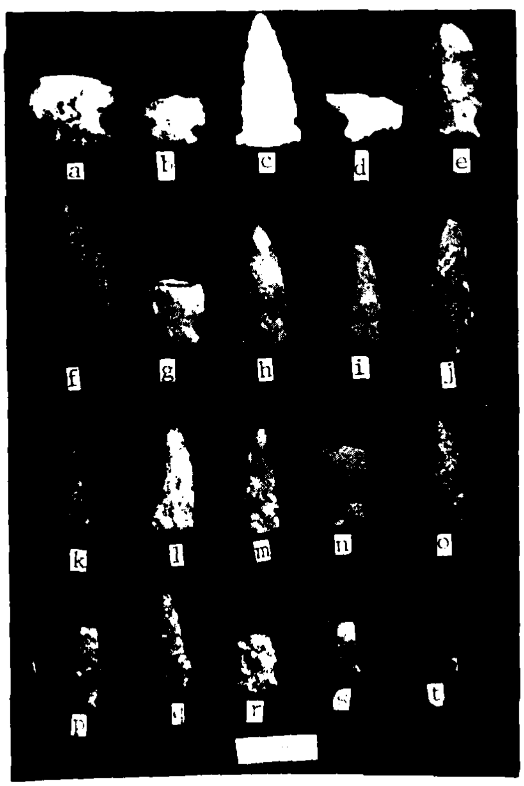


Plate 6. Projectile points/knives. a, Class A; b, Class B; c, Class C; d, Class D; e-g, Class E; h-o, Class F; p-q, Class G; r-t, Class H.

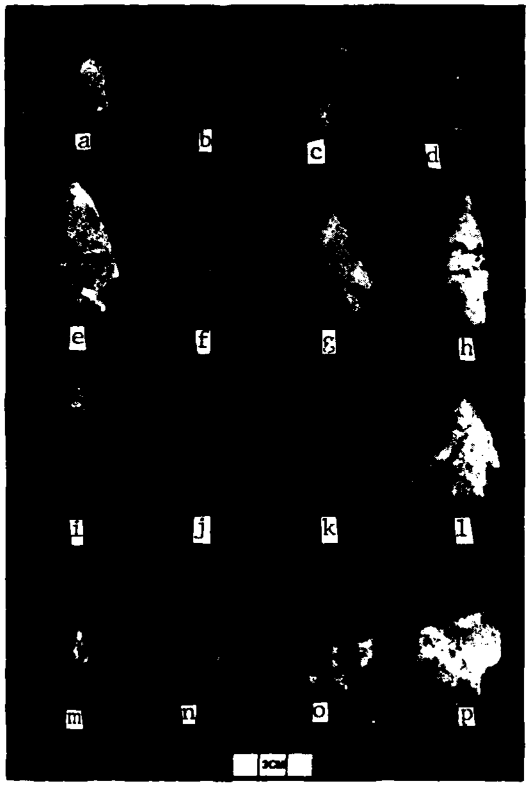


Plate 7. Projectile points/knives. a-b, Class H; c-d, Class J; e-g, Class K; h-k, Class L; l-m, Class M; n-p, Class N.

Plate 8. Projectile points/knives. a-b, Class O; c, Class P; d, Class Q: e, Class R; f, Class S; g-h, Class T; i, Class U; j-k, Class V.

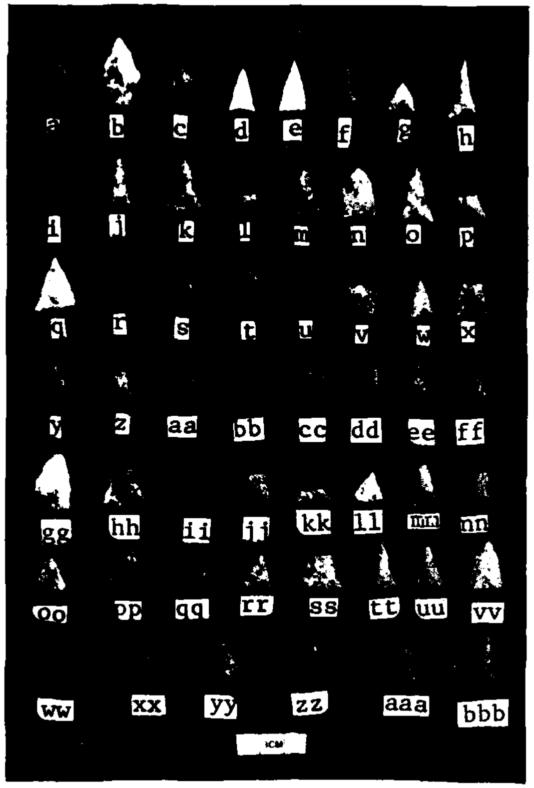


Plate 9. Projectile points/knives. a, Class H; b, Class W; c, Class X; d-bbb, Class Y.

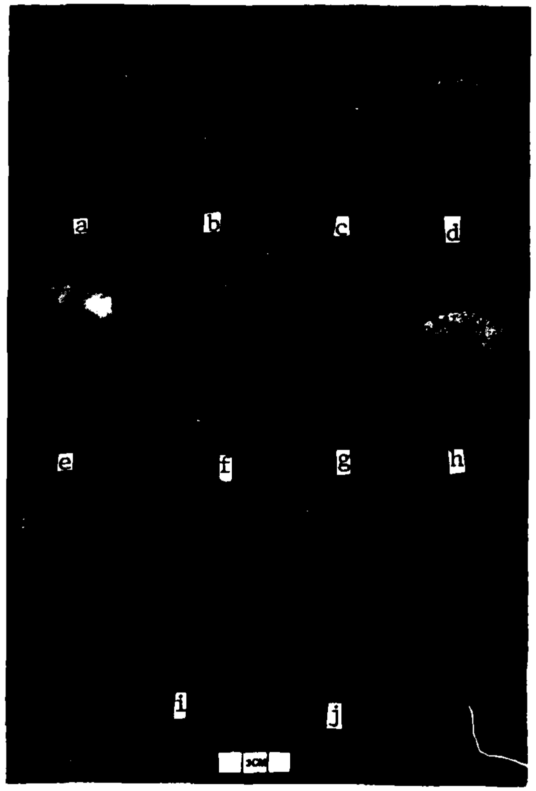


Plate 10. Selected bifacial and unifacial adze/scrapers. a-h, bifacial; i-j, unifacial.

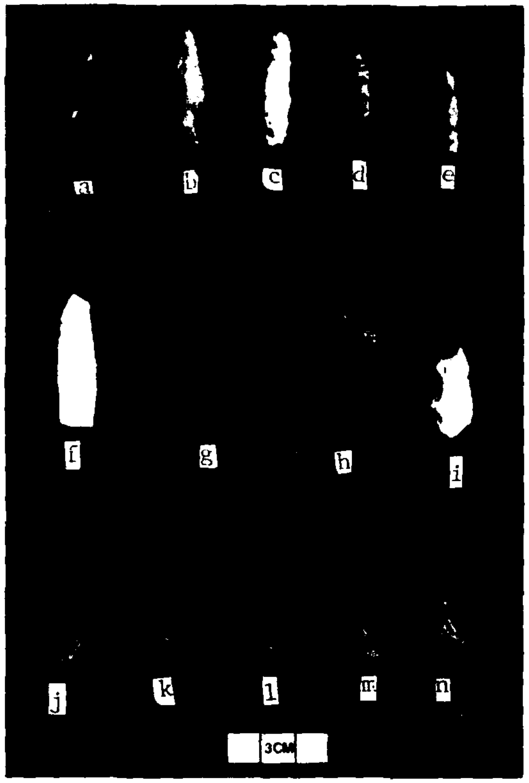


Plate 11. Bifacial drills and flake tools. a, Expanded base drill; b-e, Shaft drills; f, knife; g-i, retouched flakes; j-k, notched flakes; l-m, gravers; n, perforator.

Plate 12. Medium and small oval scrapers. a-f, medium oval scrapers; g-h, small oval scrapers.

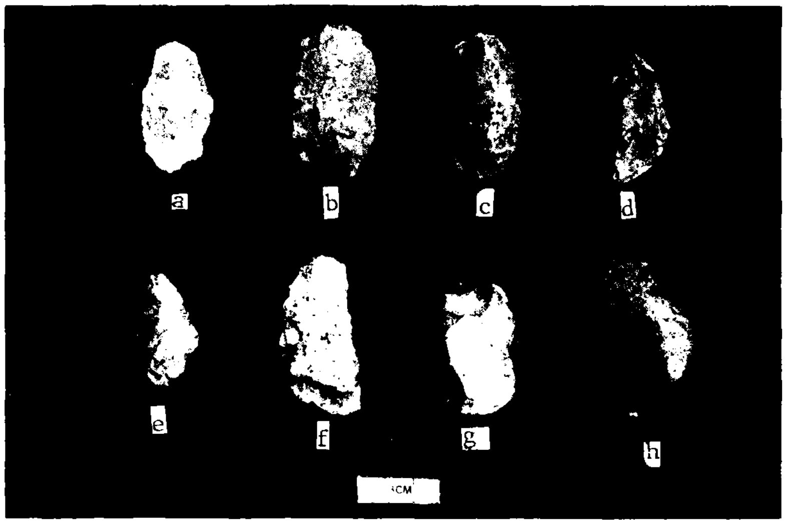


Plate 13. Lithic tools. a-d. Bifacial elongated cutting tools; e, Cutting tool with hafting area; f-g, Denticulated bifaces; h, notched pebble.

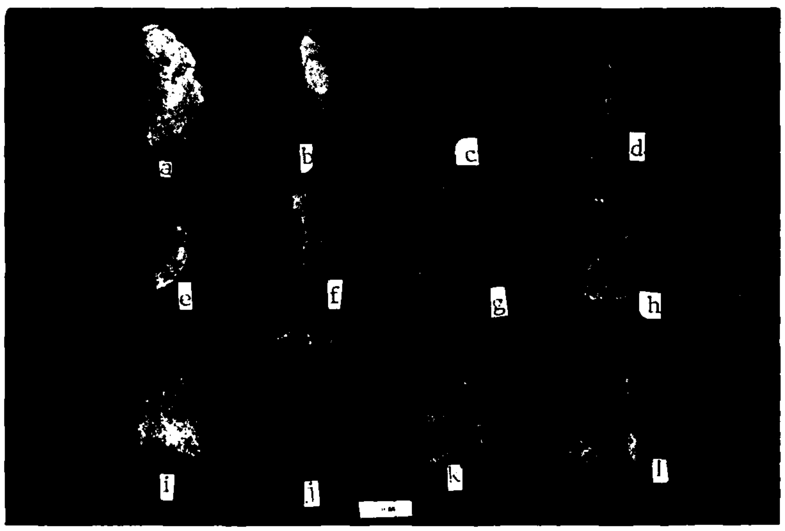


Plate 14. Modified pebbles. a-d, Class 1; e-h, Class 2; i-l, Uniface modified pebbles

Plate 15. Preforms. a-b, Class 1; c-d, Class 2; e, Class 3; f-h, Class 4; i-n, Triangular point preforms.

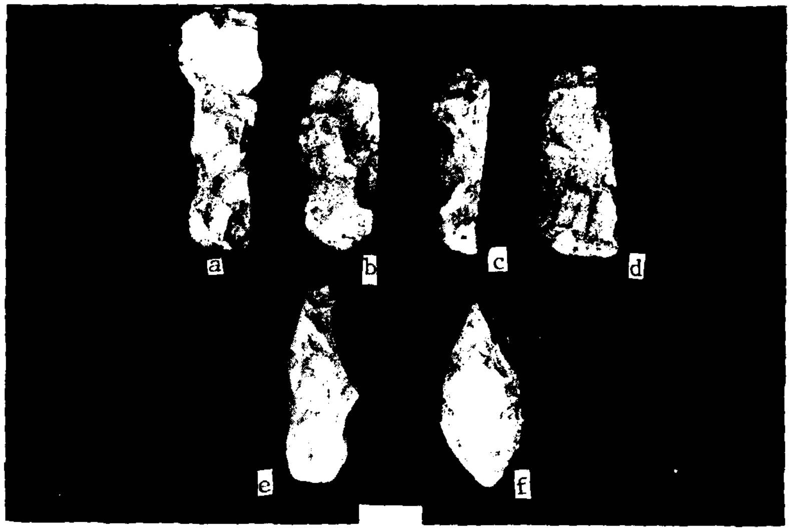


Plate 16. Cache of unifacial preforms from Feature 57.

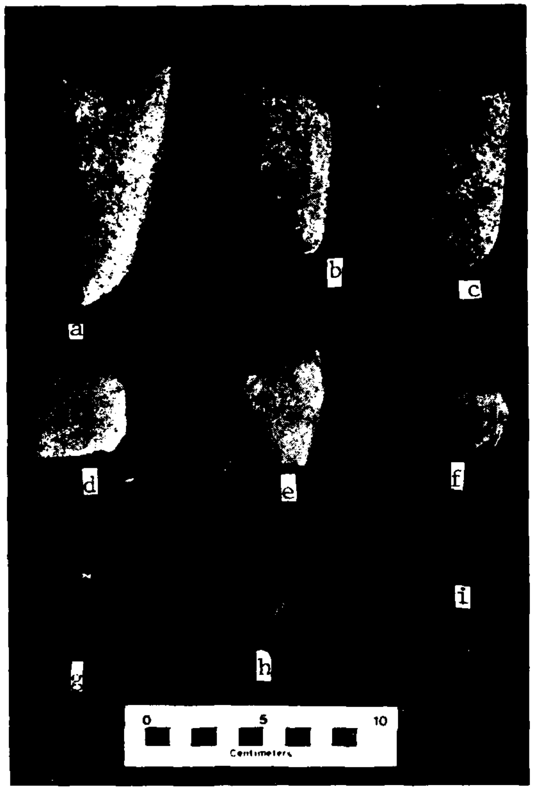


Plate 17. Ground and polished lithic artifacts. a-f, Whole and broken celts; g-i, Broken bannerstones.

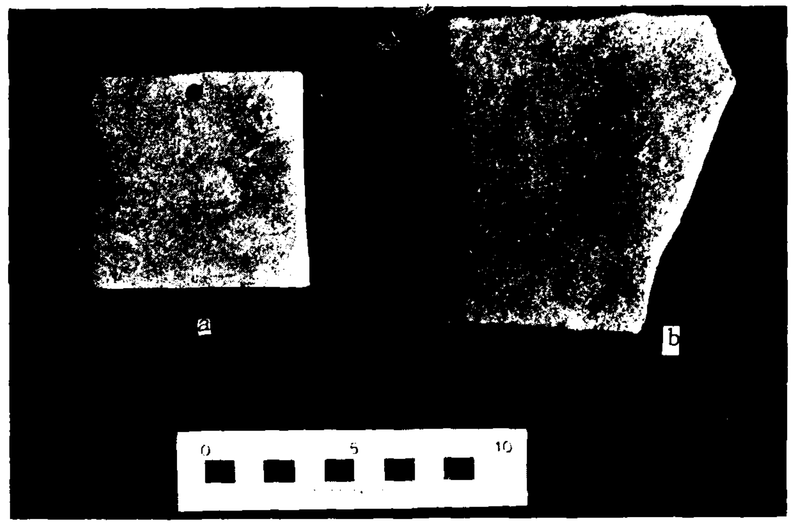
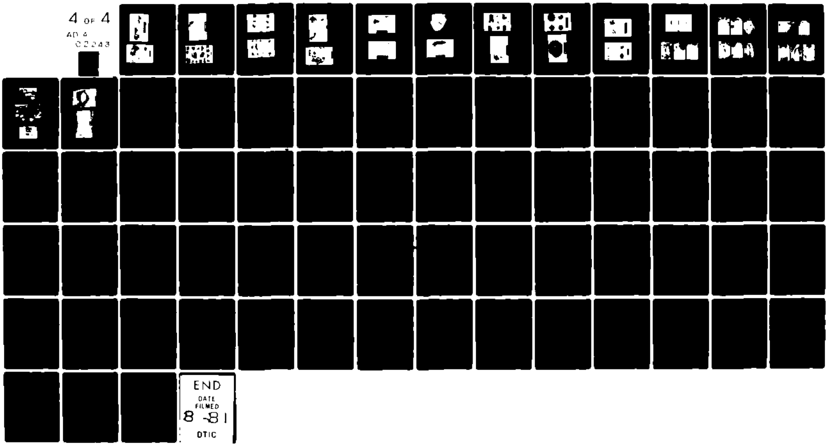


Plate 18. Ground lithic artifacts. a, Siltstone gorget; b, Sandstone palette.

AD-A102 243 MISSISSIPPI STATE UNIV MISSISSIPPI STATE DEPT OF ANTH--ETC F/G 5/6
THE KELLOGG VILLAGE SITE INVESTIGATIONS, CLAY COUNTY, MISSISSIP--ETC(U)
SEP 80 J R ATKINSON, J C PHILLIPS, R WALLING DACW01-77-C-0015

UNCLASSIFIED NL



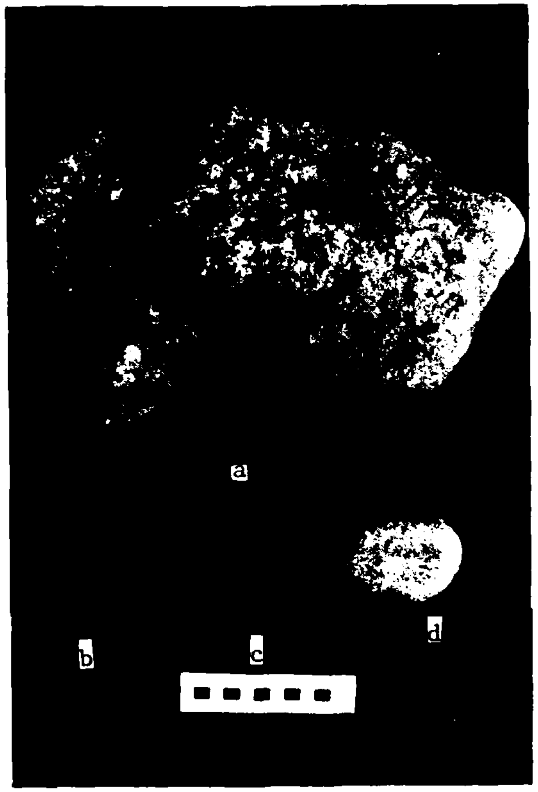


Plate 19. Food processing implements. a, mortar; b-c, pestles; d, pitted anvil stone.

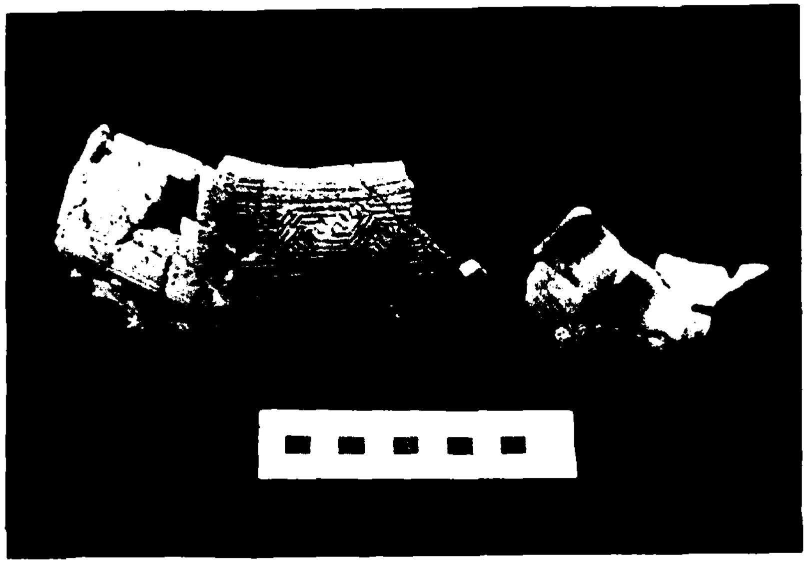


Plate 20. Portions of an Alexander Incised, _variety Kellogg_ vessel.

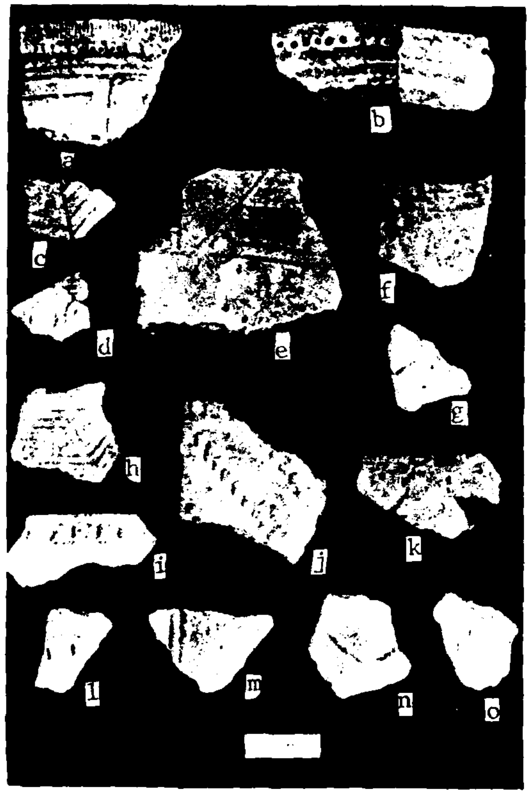


Plate 21. Henson Springs phase pottery sherds.

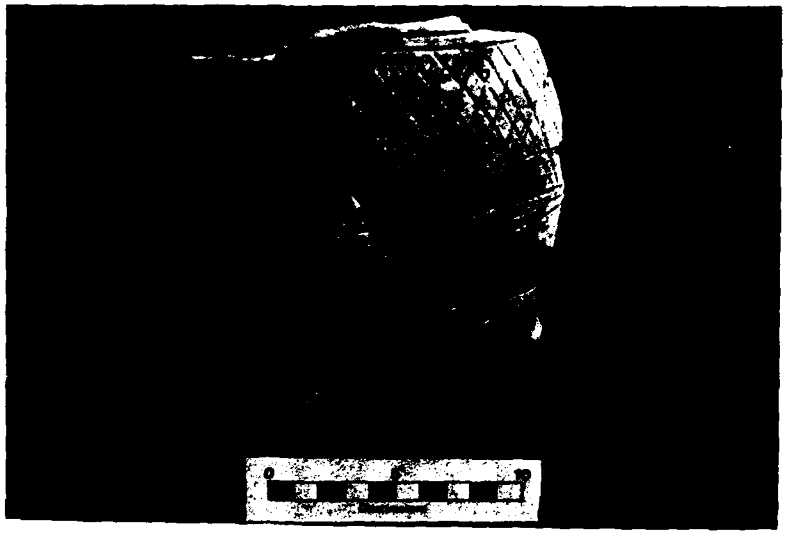


Plate 22. Partial Alexander Incised, variety Negro Slough vessel.

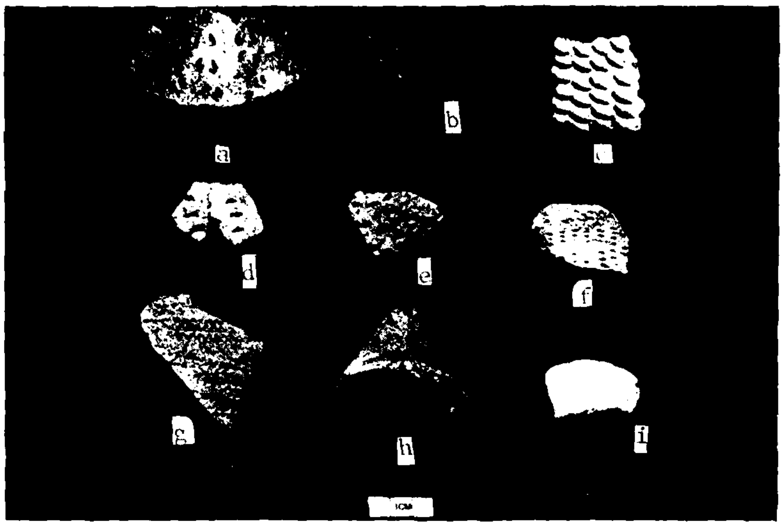


Plate 23. Henson Springs phase pottery sherds.

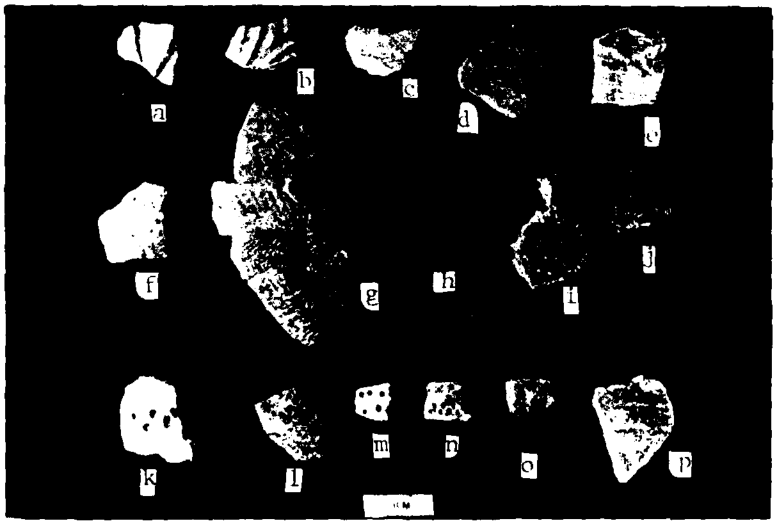


Plate 24. Minority ware sherds of various types.

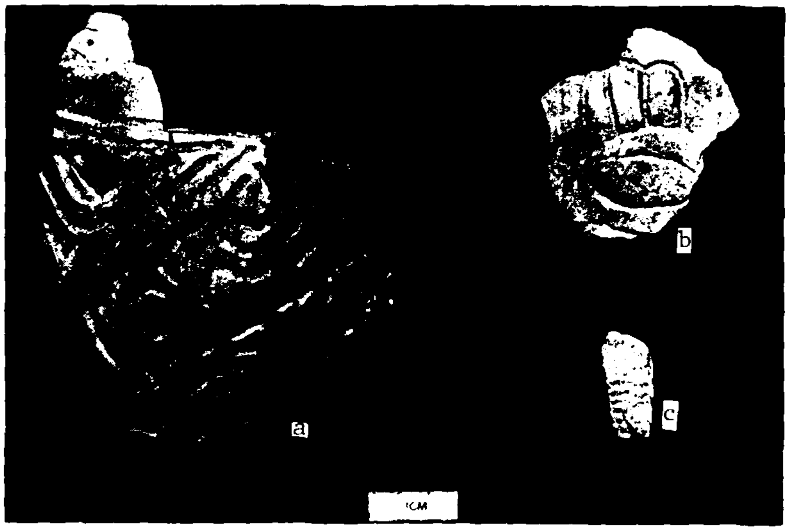


Plate 26. Marksville pottery sherds.

Plate 25. Partial Mulberry Creek Cordmarked vessel

Plate 27. Mississippi Plain, variety Warrior vessel found with Burial 1.

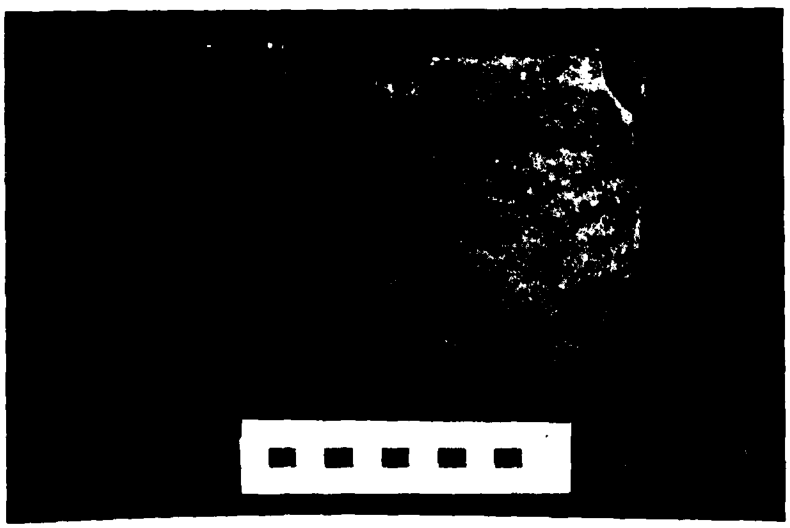


Plate 28. Mississippi Plain, variety Warrior vessel found with Burial 7.

Plate 29. Partial Moundville Incised, variety Moundville vessel from 1974 testing.

Plate 30. Partial Moundville Incised, variety Carrolton vessel from Burial 6.

Plate 31. Partial Moundville Incised, _variety Carrolton_ vessel from Burial 20.

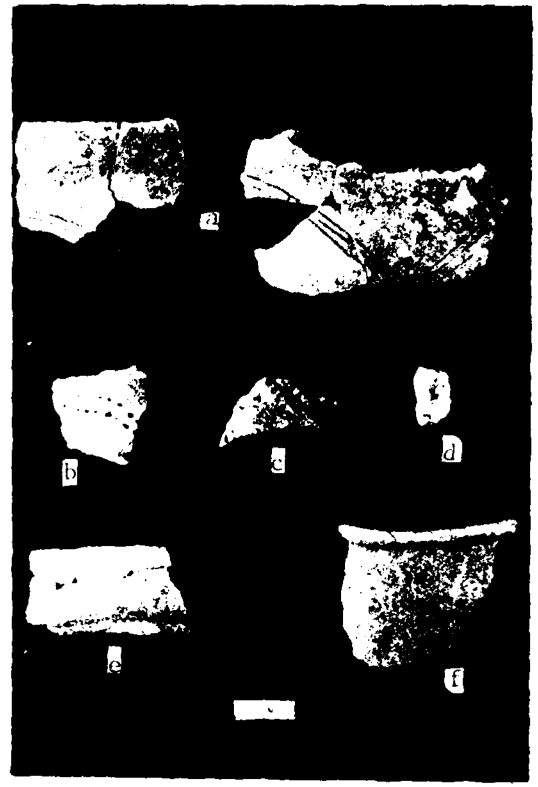


Plate 32. Mississippian component pottery sherds.

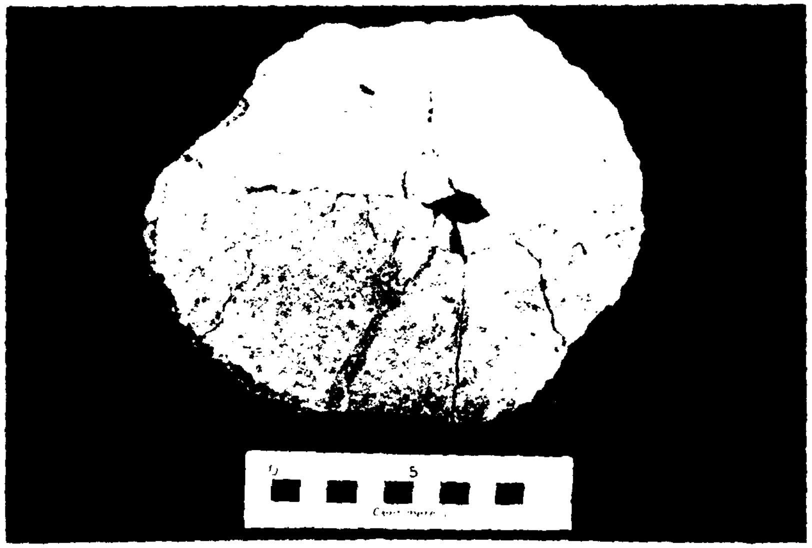


Plate 33. Partial shell tempered plate-like vessel found with Burial 29.

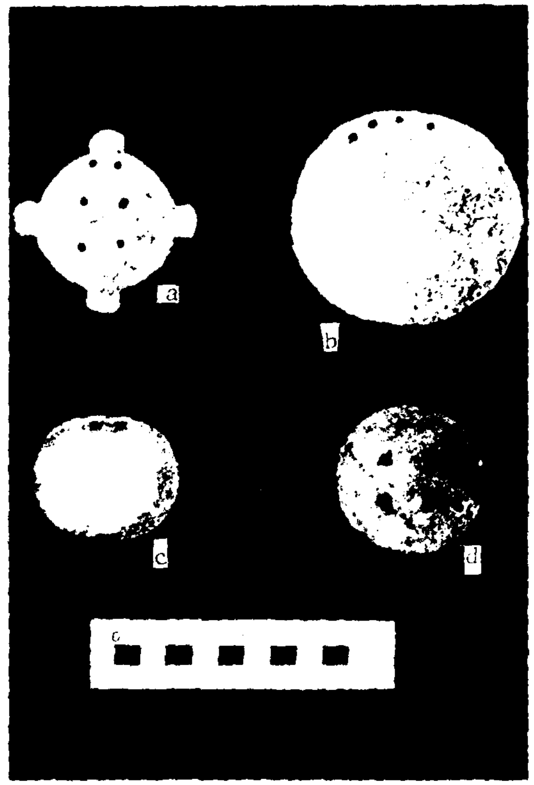


Plate 34. Shell gorgets found with burials.

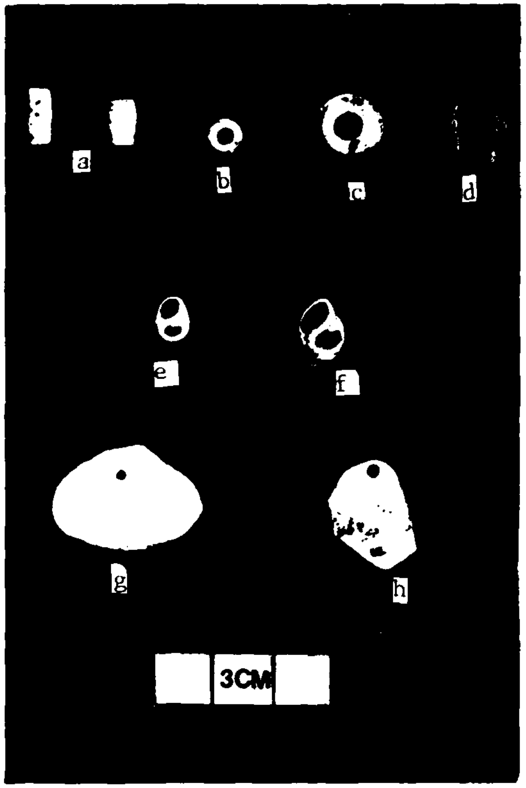


Plate 35. Shell and bone beads and mussel shell pendants.

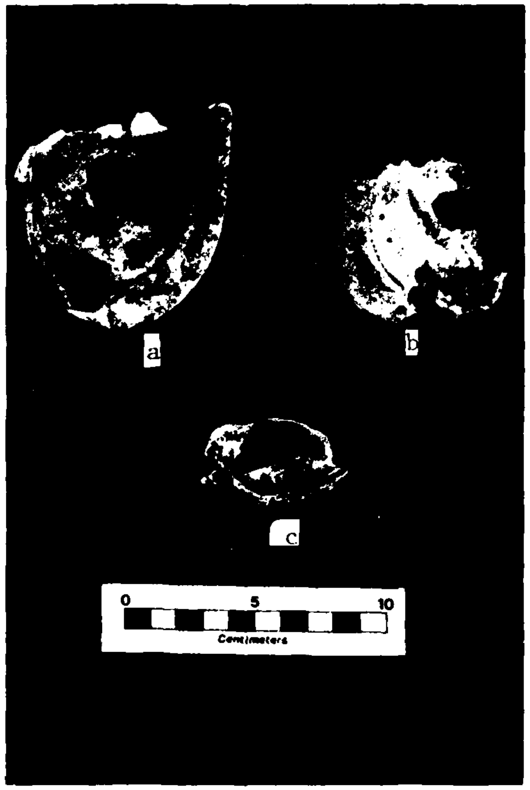


Plate 36. Drilled mussel shells.

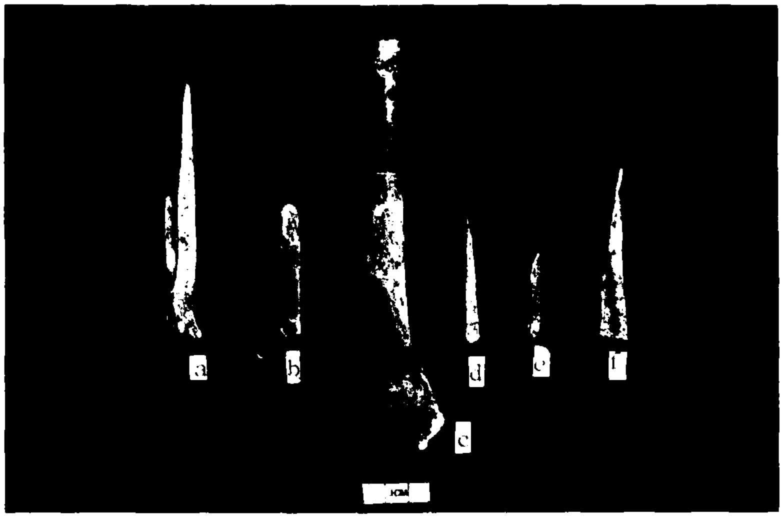


Plate 37. Bone artifacts

Plate 38. Burial 1

Plate 39. Burial 2

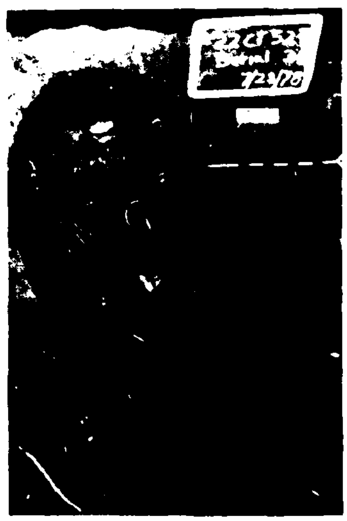


Plate 40. Burial 3

Plate 41. Burial 7

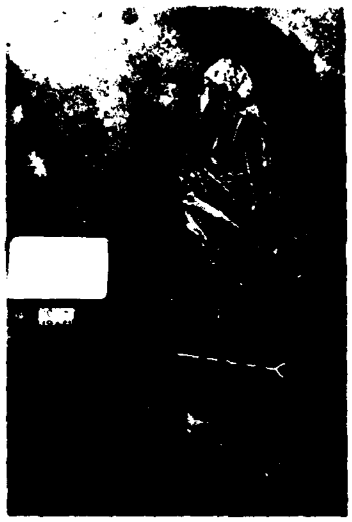


Plate 42. Burial 8

Plate 43. Burial 10 and part of Burial 8

Plate 44. Burial 12

Plate 45. Burial 14

Plate 46. Burial 17

Plate 47. Burial 19 cremation pit and siltstone gorget

Plate 48. Burial 36

Plate 49. Burial 39

Plate 50. Feature 84

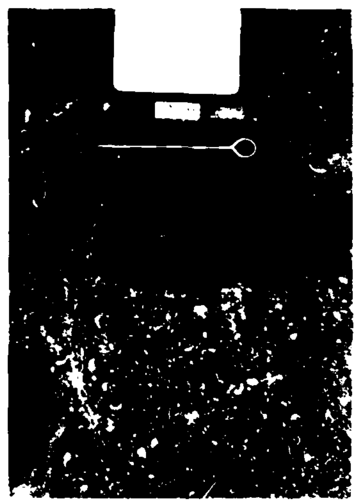


Plate 51. Feature 1 and large mortar

Plate 52. Features 131-134

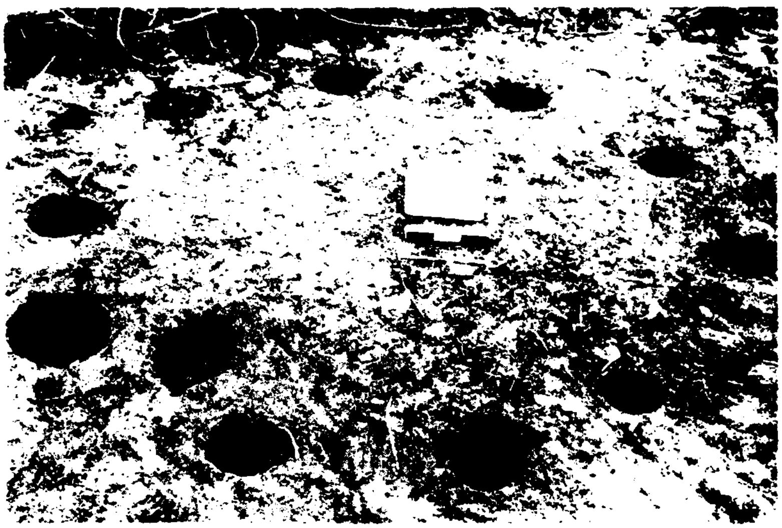


Plate 53. Features 115A-K (Structure 1) and Feature 109.

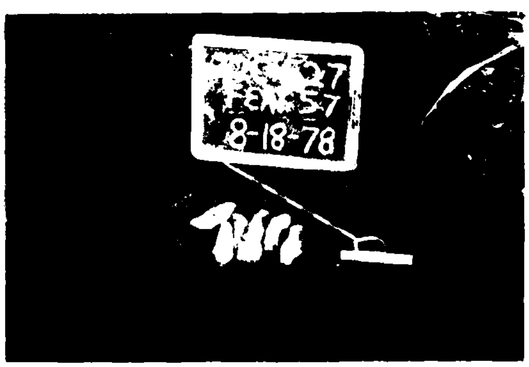


Plate 54. Cache of unifacially worked stones comprising Feature 57

Plate 55. West wall of Block I showing Feature 5 in profile.

Plate 56. Feature 5 following excavation and Feature 11.

REFERENCES CITED

Adair, James
1930 History of the American Indians. Samuel Cole Williams, ed. The Wautauga Press. Johnson City, Tennessee.

Atkinson, James R.
1974 Test excavations at the Vaughn Mound site. Appendix A in Rucker (1974), 115-158.

1975 Rolling hills: A Late Mississippian/Early Historic site in the Tombigbee River Drainage of Northeast Mississippi. Ms. on file at the Dept. of Anthropology, Mississippi State University.

1976 An historic contact Indian settlement in Oktibbeha County, Mississippi. Paper presented to the 17th Annual Conference on Historic Sites Archaeology, Tuscaloosa, Alabama, November 4, 1976.

1978 A cultural resources survey of selected construction areas in the Tennessee-Tombigbee Waterway: Alabama and Mississippi, Vol. I of a two-volume report by Atkinson and Jack D. Elliott. Submitted to U.S. Army Corps of Engineers, Mobile, by the Dept. of Anthropology, Mississippi State University.

1979 A historic contact Indian settlement in Oktibbeha County, Mississippi. Journal of Alabama Archaeology, XXV, Number 1.

Atkinson, James R., and Crawford H. Blakeman, Jr.
1975 Archaeological site survey in the Tallahala Reservoir Area, Jasper County, Mississippi: 1975. Report submitted to the National Park Service. Mississippi State University.

Atkinson, James R., and Jack D. Elliott, Jr.
1978 Nance's Ferry: a 19th century brick and lime making site, Pickens County, Alabama. Report submitted to U.S. Army Corps of Engineers, Mobile, by the Dept. of Anthropology, Mississippi State University.

1979 A cultural resources survey and evaluation in the Tallahala Creek Lake, Jasper County, Mississippi. Report submitted to the U.S. Army Corps of Engineers, Mobile District by the Dept. of Anthropology, Mississippi State University.

Beardsley, Richard K.
1955 Function and Evolutionary Implications of Community Patterning. In Seminars in Archaeology: 1955, edited by Robert Wauchope. Memiors of the Society for American Archaeology, No. 11. Salt Lake City.

Bense, Judith H.
1979 Personal communication.

Binford, Lewis R.
1967 Smudge pits and hide smoking: The use of analogy in archaeological reasoning. American Antiquity 32:1-12.

Blakeman, Crawford H., Jr.
1975 Archaeological investigations in the Upper Central Tombigbee Valley: 1974 season. Report submitted to the National Park Service by the Dept. of Anthropology, Mississippi State University.

1976 A cultural resource survey of the Aberdeen Lock and Dam and Canal Section areas of the Tennessee-Tombigbee Waterway: 1975. Report submitted to the National Park Service by the Dept. of Anthropology, Mississippi State University.

Blakeman, Crawford H., Jr., James R. Atkinson, and G. Gerald Berry
1976 Archaeological excavations at the Cofferdam site, 22Lo599, Lowndes County, Mississippi. Report submitted to U.S. Army Corps of Engineers, Mobile, by the Dept. of Anthropology, Mississippi State University.

Blitz, John H.
1980 Variation in Mississippian structures at Lubbub Creek. Proceedings of the 36th Southeastern Archaeological Conference, November 8-10, 1979. Bulletin 23.

Brookes, Samuel O.
1979 The Hester site: An early Archaic occupation in Monroe County, Mississippi. Miss. Dept. of Archives and History. Report No. 5. Jackson.

1979 Personal communication.

Brown, James A.
1971 The dimensions of status in the burials at Spiro. American Antiquity. Memoirs of the Society for American Archaeology, 25.

Bullen, Ripley P.
1970 The transitional period of southern Southeastern United States as viewed from Florida, or the roots of the Gulf tradition. In Southeastern Archaeological Conference, No. 13, edited by Bettye J. Broyles. Morgantown, West Virginia.

1972 The Orange period of peninsular Florida. In "Fiber Tempered Pottery in Southeastern United States and Northern Canada," edited by Ripley P. Bullen and James B. Stoltzman. The Florida Anthropologist, Vol. 25, No. 2 Part 2. Gainesville, Florida.

1974 The origins of the Gulf tradition as seen from Florida. The Florida Anthropologist, Vol. 27, No. 2. Gainesville, Florida.

Caldwell, Joseph R.
1958 Trend and tradition in the prehistory of the eastern United States. Illinois State Museum Scientific Papers, Vol. 10. Springfield, Illinois.

1964 Interaction spheres in prehistory. In "Hopewellian Studies," edited by Joseph R. Caldwell and Robert L. Hall. Illinois State Museum Scientific Papers, Vol. 12. Springfield, Illinois.

Cambron, James W., and David C. Hulse
1964 Handbook of Alabama archaeology: Part 1: Point types. Archaeological Research Association of Alabama.

Cambron, James W., and Spencer Waters
1961 Flint Creek Rock Shelter (Part II). Journal of Alabama Archaeology 7:1-49.

Chapman, Jefferson
1977 Archaic period research in the lower Little Tennessee River valley. University of Tennessee Department of Anthropology Report of Investigations 18.

Clemmer, Glenn H.
1980 Personal communication.

Conn, Thomas L.
1978 Archaeological investigations at 22Lo515, Lauderdale County Northeast Industrial Park, Lauderdale County, Mississippi. Report submitted to the Lauderdale County Board of Supervisors by the Dept. of Anthropology, Mississippi State University.

Cook, Fannye A.
1959 Freshwater fishes in Mississippi. Mississippi Game and Fish Commission.

Cotter, John L., and John M. Corbett
1951 Archaeology of the Bynum Mounds, Mississippi. National Park Serivce, Archaeological Research Series, No. 1.

Damon, P. E., C. W. Ferguson, A. Long, and E. I. Wallich
1974 Dendrochronologic calibration of the radiocarbon time scale. American Antiquity 39:350-366.

DeJarnette, David L, and Steve B. Wilberly
1941 The Bessemer site. Geological Survey of Alabama, Museum Paper 17. University of Alabama.

DeJarnette, David L., Edward B. Kurjack, and James W. Cambron
1962 Excavations at the Stanfield-Worley Bluff Shelter. Journal of Alabama Archaeology 8:1-124.

DeJarnette, David L., John A. Walthall, and Steve B. Wimberly
1975 Archaeological investigations in the Buttahatchee River Valley II: excavations at Stucks Bluff Rock Shelter. Journal of Alabama Archaeology 21:99-119.

Dunning, Arthur B.
1964 The Tallahatta Formation in Clarke County, Alabama. Journal of Alabama Archaeology 10:50-60.

Dye, David
1980 Personal communication.

Ensor, H. Blaine
1978 An evolution and synthesis of changing lithic technologies in the Central Tombigbee Valley. Paper delivered to the 35th Southeastern Archaeological Conference, Knoxville.

1979 Classification and synthesis of the Gainesville Reservoir lithic materials: chronology, technology, and use. Draft report submitted to the U.S. Army Corps of Engineers, Mobile District by the Office of Archaeological Research, University of Alabama.

Faulkner, Charles H., and J. B. Graham
1965 Excavations in the Nickajack Reservoir: season I. Tennessee Archaeological Society Miscellaneous Paper No. 7. Knoxville.

Faulkner, Charles H., and Major C. R. McCollough
1973 Introductory report of the Normandy reservoir salvage project: environmental setting, typology, and survey. University of Tennessee Department of Anthropology, Report of Investigations 11.

Fehon, Jacqueline R.
1975 Environmental setting. In the Cache River archaeological project, assembled by M. B. Schiffer and J. H. House. Arkansas Archaeological Survey Research Series 8:17-27.

Ford, James A.
1969 A comparison of formative cultures in the Americas. Smithsonian Contributions to Anthropology, 11.

Ford, James A., and Gordon Willey
1940 The Crooks site, a Marksville period burial mound in La Salle Parish, Louisiana. Anthropological Study No. 3, Louisiana Geological Survey. New Orleans.

Ford, James A., and George I. Quimby, Jr.
1945 The Tchefuncte culture, an early occupation of the Lower Mississippi Valley. Society for American Archaeology, Memoir 2.

Fundaburk, Emma L., and Mary D. Foreman
1957 Sun circles and human hands. Emma Lila Fundaburk, publisher. Luverne, Alabama.

Gilbert, B. Miles
1973 Mammalian osteo-archaeology: North America. Missouri Archaeological Society, Columbia.

Godden, Geoffrey A.
1965 Encyclopaedia of British pottery and porcelain marks. Bonanza Books, New York.

Greengo, Robert E.
1964 Issaquena: an archaeological phase in the Yazoo Basin of the Lower Mississippi Valley. American Antiquity, Memoirs of the Society for American Archaeology, Number 18.

Griffin, James B.
1980 Personal Communication.

Haag, William G.
1939 Pottery type descriptions. Southeastern Archaeological Conference Newsletter, Vol. 1, No. 1.

1942 A description and analysis of the Pickwick pottery. In An archaeological survey of the Pickwick Basin in the adjacent portions of the states of Alabama, Mississippi, and Tennessee, W. S. Webb & D. L. DeJarnette, BAE Bulletin 129:509-526.

Heimlich, Marion D.
1952 Guntersville Basin pottery. Geological Survey of Alabama, Museum Paper No. 32.

Irwin-Williams, Cynthia
1970 The use of a simple water level as an intrasite leveling device. American Antiquity, Vol. 35, Number 1, 109-110.

Jenkins, Ned J.
1975 Archaeological investigations in the Gainesville Lock and Dam Reservoir: 1974. Report submitted to the National Park Service, Atlanta, by the Dept. of Anthropology, University of Alabama.

1978 A ceramic chronology for the Gainesville Reservoir. Paper presented at the 35th annual meeting Southeastern Archaeological Conference, Knoxville.

1978a Abbreviated ceramic type/variety descriptions from the Gainesville Reservoir, a preliminary statement (revised version, April 1978). Ms. on file, Office of Archaeological Research, University of Alabama.

1979 Gainesville Reservoir ceramic description and chronology. University of Alabama Office of Archaeological Research, Report of Investigations 12. Draft submitted to COE, Mobile.

1979a Personal communication.

Jenkins, Ned J., Caliup B. Curren, Jr., and Mark F. DeLeon
1975 Archaeological site survey of the Demopolis and Gainesville Lake navigation channels and additional construction areas. Report submitted to the National Park Service by the Dept. of Anthropology, University of Alabama.

Jennings, Jesse D.
1941 Chickasaw and earlier Indian cultures of Northeast Mississippi. Journal of Mississippi History, Vol. 3, No. 3.

1944 The archaeological survey of the Natchez Trace. American Antiquity 4:408-414.

Jones, Walter B.
1939 Geology of the Tennessee Valley region of Alabama, with notes on the topographic features of the area and the effect of geology and topography upon aboriginal occupation. In An archaeological survey of Wheeler Basin on the Tennessee River in northern Alabama, by W. S. Webb. Bureau of American Ethnology, Bulletin 122:9-20.

Kellogg, Lloyd C.
1978 Personal communication.

Kneberg, Madeline
1956 Some important projectile points found in the Tennessee area. Tennessee Archaeologist, Vol. 2.

1959 Engraved shell gorgets and their associations. Tennessee Archaeologist, Vol. 15, No. 1.

Larson, Lewis H., Jr.
1971 Archaeological implications of social stratification at the Etowah site, Georgia. American Antiquity, Memoirs of the Society for American Archaeology, Number 25.

1980 Aboriginal subsistence technology on the Southeastern coastal plain during the late prehistoric period. University Presses of Florida. Gainesville.

Lewis, Thomas M. N., and Madeline Kneberg

1946 Hiwassee Island. Univeristy of Tennessee Press.

1959 Additional Nuckolls' site material. Tennessee Archaeologist, Vol. 15, No. 2.

Lewis, T. M. N., and Madeline Kneberg Lewis

1961 Eva: an Archaic site. University of Tennessee Press. Knoxville.

Marshall, Richard A.

1965 An archaeological investigation of Interstate 55 through New Madrid and Pemiscot Counties, Missouri, 1964. Highway Archaeology Report, No. 1, University of Missouri, Columbia.

1973 The prehistory of Mississippi. In A history of Mississippi, Vol. 1, edited by R. A. McLemore, pp. 24-68. Univeristy and College Press of Mississippi, Jackson.

McKenzie, Douglas H.

1965 The burial complex of the Moundville phase, Alabama. The Florida Anthropologist 18.

1966 A summary of the Moundville phase. Journal of Alabama Archaeology 12:1-58.

Michels, Joseph W.

1973 Dating methods in archaeology. Seminar Press. New York.

Miller, W. Frank, and others

1973 An ecological study of the Tennessee-Tombigbee Waterway. Report submitted to the District Engineer, Mobile District, U. S. Corps of Engineers by the Institute for Environemtnal Studies, Mississippi State University.

Moore, Clarence Bloomfield

1901 Certain aboriginal remains of the Tombigbee River. Journal of the Academy of Sciences of Philadelphia, Vol. XI.

Morse, Dan F.

1969 Introducing northeastern Arkansas prehistory. The Arkansas Archaeologist 10:12-28.

Morse, Dan F., and Phyllis A. Morse

1977 Excavation, data interpretation, and report on the Zebree homestead site, Mississippi County, Arkansas. Report submitted to Corps of Engineers, Memphis by Arkansas Archaeological Survey.

Munson, Patrick J.

1969 Comments on Binford's "Smudge pits and hide smoking: The use of analogy in archaeological reasoning." American Antiquity 34:83-84.

Nelson, Lee H.
1968 Nail chronology as an aid to dating old buildings. American Association for State and Local History, Technical Leaflet 48.

Neilsen, Jerry J., and C. W. Moorehead
1972 Archaeological salvage investigations within the proposed Gainesville Lock and Dam Reservoir, Tennessee-Tombigbee Waterway. Report submitted to the National Park Service by the Dept. of Anthropology, University of Alabama.

Neilsen, Jerry J., and Ned J. Jenkins
1973 Archaeological investigations in the Gainesville Lock and Dam Reservoir: 1972. Report submitted to the National Park Service by the Dept. of Anthropology, University of Alabama.

O'Hear, John W., and Thomas L. Conn
1978 Archaeological salvage excavations at the L. A. Strickland site (22Ts765), Tishomingo County, Mississippi. Report submitted to U. S. Army Corps of Engineers, Nashville, by the Dept. of Anthropology, Mississippi State University.

O'Hear, John W., Clark Larsen, John C. Phillips, Marge M. Scarry, and Erica Simmons.
1979 Archaeological salvage excavations at the Tibbee Creek site (22Lo600) Lowndes County, Mississippi. Report submitted to U.S. Army Corps of Engineers, Mobile, by the Dept. of Anthropology, Mississippi State Univeristy.

Peebles, Christopher S.
1971 Moundville and surrounding sites: some structural considerations of mortuary practices II. American Antiquity, Memoirs of the Society for American Archaeology, Vol. 36, No. 3, Part 2, 68-91.

Peterson, Drexel
1973 The Spring Creek site, Perry County, Tennessee: report of the 1972-1973 excavations. Memphis State University Anthropological Research Center, Occasional Papers 7.

Phillips, Philip
1970 Archaeological survey in the lower Yazoo Basin, Mississippi, 1949-1955. Papers of the Peabody Museum of Archaeology and Ethnology. Harvard University.

Phillips, Philip, James A. Ford, and James B. Griffin
1951 Archaeological survey in the lower Mississippi alluvial valley, 1940-1947. Harvard University, Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 25. Cambridge.

Rucker, Marc D.
1974 Archaeological Survey and Test Excavations in the Upper-Central Tombigbee River Valley: Aliceville-Columbus Lock and Dam and Impoundment areas, Alabama and Mississippi. Report submitted to the National Park Service by the Dept. of Anthropology, Mississippi State University.

Salo, Lawr V., editor
1969 _Archaeological investigations in the Tellico Reservoir, Tennessee, 1967-1968: an interim report_. University of Tennessee, Dept. of Anthropology. Knoxville.

Schroedl, Gerald F.
1975 _Archaeological investigations at the Harrison Branch and Bat Creek sites_. University of Tennessee, Dept. of Anthropology. Report of Investigations Number 10.

Sears, William H., and James B. Griffin
1950 Fiber-Tempered Pottery of the Southeast. In _Prehistoric Pottery of the Eastern United States_, edited by James B. Griffin. Museum of Anthropology, University of Michigan, Ann Arbor, Michigan.

South, Stanley
1977 _Method and theory in historical archaeology_. Academic Press, New York.

Steponaitis, Vincas P.
1978 Some preliminary chronological and technological notes on Moundville pottery (revised version). Paper delivered at the 35th Southeastern Archaeological Conference, Knoxville.

1979 Personal communication.

Stoltman, James B.
1966 New radiocarbon dates for Southeastern fiber-tempered pottery. _American Antiquity_, Vol. 31, No. 6. Salt Lake City.

Sussman, Lynne
1977 Changes in pearlware dinnerware, 1780-1830. _Historical Archaeology_, 11.

Swanton, John R.
1946 The Indians of the Southeastern United States. _Bureau of American Ethnology, Bulletin 137_. Washington.

Thomas, Joab
1974 Natural vegetation. In _Atlas of Mississippi_, edited by R. D. Cross and R. W. Wales. C. T. Traylor, chief cartographer, 20-21. University Press of Mississippi, Jackson.

Toth, Alan
1974 Archaeology and ceramics at the Marksville site. Museum of Anthropology, University of Michigan, No. 56.

Walthall, John A., and Ned J. Jenkins
1976 The Gulf Formational stage in Southeastern prehistory. Southeasern Archaeological Conference, Bulletin 19:43-49.

Waring, A. J., Jr., and Preston Holder
1945 A prehistoric ceremonial complex in the southeastern United States. American Anthropologist, 47:1-34.

Webb, William S., and David L. DeJarnette
1942 An archaeological survey of Pickwick basin in the adjacent portions of the states of Alabama, Mississippi and Tennessee. Smithsonian Institution, Bureau of American Ethnology Bulletin 129.

1948 The Perry site: Lu°25. Alabama Museum of Natural History, Museum Paper 25.

Willey, Gordon R.
1949 Archaeology of the Florida Gulf Coast. Smithsonian Miscellaneous Collections, Vol. 113. Washington.

Wimberly, Steve B.
1960 Indian Pottery from Clarke County and Mobile County, southern Alabama. Geological Survey of Alabama, Museum of Natural History, Museum Paper 36. University, Alabama.

Winters, Howard D.
1969 The Riverton Culture: a second millenium occupation in the Central Wabash Valley. Illinois State Museum, 13, and Illinois Archaeological Survey, Springfield.

Wright, H. E., Jr.
1976 The dynamic nature of Holocene vegetation. Quaternary Research 6:581-596.

Wynn, Jack T., and James R. Atkinson
1976 Archaeology of the Okashua and Self Sites, Mississippi. Report submitted to the National Park Service by the Dept. of Anthropology, Mississippi State University.

APPENDICES

APPENDIX A
22Cl527: THE HUMAN SKELETAL REMAINS

by

Robert I. Gilbert, Jr.

The following is a descriptive report of the skeletal remains excavated by a field team from the Mississippi State University under the direction of Mr. James R. Atkinson of the same institution. The human skeletal material was recovered from the Kellogg site (22Cl527) located in Clay County, Mississippi. Most individuals are affiliated with the Mississippian cultural horizon.

The skeletons were received by R. I. Gilbert, Jr. and delivered by Mr. Gerald Berry; subsequent material was shipped by bus service. The condition of the skeltal material ranged widely, although several individuals were in excellent condition. A number of the skeletons had been recovered as salvage efforts thereby preventing relaxed and careful excavation. The majority of these "salvage" burials are inventoried under the later burial numbers. In addition to the damage which some sustained through salvage operations, some displayed breakage resulting from transit which appears most commonly in the crania (due to hardened soil within the crania). There is no evidence of deliberate cranial deformation as a cultural practice. However, it should be noted that the general condition of the crania would have obscured such deformations in most cases.

Recovery of teeth was good and most of the teeth present were still in place, although a number had been dislodged from the maxillae. Many of the long bones were complete but some were broken at the proximal and/or distal ends. Not surprisingly, phalanges, metacarpals, metatarsals and ribs were the least frequently represented either as fragments or complete bones. Shovel shaped incisors were very common and occurred in the maxillary central incisors most frequently, although some were noted in the mandibles.

The aging and sexing of the skeletal material was accomplished using standard anthropometric methods. Aging was based upon the methods developed by Todd (1920), McKern and Stewart (1957) for public symphyseal appearance, Krogman (1962) for sutural closures and Moorrees, Fanning and Hunt (1963) for dentitional aging. Sexing was based upon techniques developed by Krogman (1962), Phenice (1969) and Bass (1971). These methods utilize relative size of mastoid processes, dentition, size of supraorbital torri, pelvic width, greater sciatic notch width, ventral arch of the pubic bone, zygomatic arch extension, mandibular angle and femoral head diameter.

All measurements taken were from reconstructed and whole long bones. No attempts to construct estimates of cranial measurements or long bones were made if the material in question demanded elaborate reconstruction or simple estimates to produce the desired measurement. The decision to avoid reconstruction and the introduction of preservatives was made upon the following bases: 1) at some point later in time it may be desirable to test for trace element content of the bones (preservatives constituting a considerable impediment to this effort); 2) reconstruction precludes further measurement and analyses of individual portions of the skeleton (particularly if the cranium is in question); and 3) the research future of the material is undecided and any intervention upon the part of the analyst could well impair such activities. All measurements of cranial and post-cranial material were taken using spreading calipers, sliding calipers and an osteometric board utilizing the procedures set forth by Bass (1971). All measurements obtained from complete bones are detailed by burial number in Tables 1 and 2.

The general health of the population was good as evidenced by few pathologies. Those pathologies noted were of three groups (excluding carious lesions of the teeth): infectious, traumatic and developmental. The majority of infectious pathologies were of slight to severe periosteal osteomylytic lesions. The most common developmental pathology noted was perforations of the sternal body with continuing circumscribed apposition. Several cases of traumatic pathology (fractured

Table 1. Skull Measurements

Measurement*	Burial Number									
	#1	#5	#7	#8	#9	#12	#14	#21	#23	#34
Max. Cran. Length	165							213		
Max. Cran. Breadth	134							171		
Baison-Bregma Height	141							180		
Porion-Bregma Height	127									
Min. Frontal Breadth	88							131		
Total Facial Height								115		
Upper Facial Height								70		
Facial Width	110							138		
Nasal Height								52		
Nasal Breadth	26							20		
Orbital Height	35							33		
Orgital Breadth	33							64		
Maxillo-Alveolar Length										
Maxillo-Alveolar Breadth										
Palatal Length								52		
Palatal Breadth								41		
Bicondylar Breadth				130			112	122	130	
Bigonial Breadth			104.2	90.8		112	80	84	77.5	
Min. Breadth Ascend. Ramus		36.2	42	30.6	33	36	32	36	34	
Ht. Ascend. Ramus at Condyle		59.5	66.2	60.3	65		57		60	69.9
Ht. Mandibular Symphysis		26	35.4	30.1	33.2	28.1	22.5	40	26	

*All measurements are given in millimeters and were taken from complete bones or broken bones whose constituent parts would permit an accurate measurement of the total bone.

Table 2. Long Bone Measurements

Measurement*	Burial Number																							
	#1		#7		#8		#9		#12		#14		#15		#17		#18		#21		#32		#34	
	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R
Max. Humerus Length	360							315.5	315										335					296
Max. Humerus Dia. Mid-shaft						20		20	17.5															21
Min. Humerus Dia. Mid-shaft								17	22															11
Max. Dia. of Humerus Head	45			42.5		40.5		43	47															42.3
Max. Radius Length	222				235	230	235									250			250					
Max. Ulna Length					245	258	252			275	241					278				266				
Max. Femur Length	434	436	427	427						445								445		448	412			
Bicondylar Length			423	423						450											407			
Ant. Post. Dia. Mid-shaft	26	26	29.5	31						31											28			
Med. Lat. Dia. Mid-shaft	28	28	25	26						30											25			
Max. Dia. of Head	48	46.5	44	44						46			41											
Max. Tibia Length	362	370		360											384									
Ant. Pos. Dia. Nutrient Foramen				45																				
Med. Lat. Dia. Nutrient Foramen				27																				
Max. Fibula Length		360	370																275					

*All measurements are given in millimeters and were taken from complete bones or broken bones whose constituent parts would permit an accurate measurement of the total bone

ulna, displaced ulna articulation with the humerus, broken tibia and clavicle injury) were present although the population did not appear to have experienced excessive traumas.

Pre-mortem tooth loss was noted, occuring primairly among the mandibular premolars. Carious lesions were quite evident predominently among the mandibular molars frequently leading to abscessing and ultimate tooth loss. Hypoplasia was not common, although it did occur in several of the younger individuals. No microscopic examinations of the teeth were conducted, although considerable wear facets with abrasive striations of the enamel were present suggesting grit content in the diet to some extent. Such striations may indicate that grinding implements composed of gritty substances were being used in food processing.

Burial 1 (Female; Age 21)

Most of the skeleton is present and in fairly good condition. The cranium is complete with the exception of a small portion of the central maxilliary area which is separated from the dental arch reducing the total dental inventory available for examination. The majority of the vertebral column is present except for two cervical vertebrae. The pelvis is broken into several pieces, but the necessary portions for sex identification are present. All major limb bones were recovered although several are broken. Most of the carpals, metacarpals, tarsals and metatarsals are present as are most of the phalanges.

The cranium and pelvis serve as the principal references for sex identification. The zygomatic arches are both complete and do not extend past the external auditory meatus. The superior edges of the orbits are rather sharply defined giving an overall appearance of gracile form. The mastoids also are relatively small in comparison to others examined from the population. The condition of the mandible do not permit taking the gonial angle for additional confirmation.

The pelvis although broken, thus frustrating various angular measurements, possesses the shallow and broad greater sciatic notch generally characteristic of females. In addition, the presence of

pre-auricular sulci with definite depressed grooving and some pitting strongly suggests that the individual had possibly given birth several times.

The majority of the age characteristics support a posited age of early twenties. The ossification centers at the epiphyseal surfaces of the long bones are barely completed, particularly at the proximal ends of the tibiae. The eruption of M^3, but with little wear evident upon the surface would tend to support the assigned age.

The vertebrae and the pelvis display very slight pathological disturbances. There is the faint presence of some vertebral osteoarthritic lipping on the upper lumbar bodies. The articular surfaces of the sacrum and pelvis are slightly marked with irregular patterns of calcification and some pitting. This is suggestive of some relatively severe stress applied to this region. Although it is impossible to prove, these features would certainly be congruent with early childbearing. Although not all teeth were recovered, the mandible displays some pre-mortem tooth loss (${}_1PM$, ${}_2PM$, ${}_1M$, and PM_2) which has subsequently been resorbed. The dental wear is not excessive, by comparison to other dentitions, but is quite observable.

Burial 2 (Sex undetermined; Age approximately 10)

The skeleton is in variable condition, but this is not particularly surprising for the degree of ossification which had taken place. Most of the long bones are present although broken in several cases (radii, ulnae, tibiae and fibulae). The cranium is complete as is the mandible. Several of the vertebrae are absent, and those remaining are relatively deteriorated and/or fragmented. Carpals, tarsals, metacarpals, metatarsals and assorted phalanges are partially present. The pelvis is in good condition, but broken. The sacrum is absent. The ribs present are badly fragmented, but both clavicles and portions of the scapulae are in relatively good condition.

The sex of the individual is not definitely ascertainable because of the prepubescent age which provides few accurate diagnostic sex features.

The dentition is in an intermediate stage, with permanent teeth erupting in the maxilla, and deciduous teeth (except M_1, I_1 and I_2) in the mandible. On close observation unerupted permanent dentures still encased in the mandible are present. The cranium displays incomplete primary suture closure. Incomplete ossification of the epiphyseal ends of the long bones present suggests an osteologic age of 8-10. Judging from the tooth eruption pattern an age of 10 years appears to be more accurate.

There are no infectious or traumatic pathologies evident on the bones. Of interest, however, are the presence of incudes on the cranium. A total of four incus bones are present, three in the superior border of the occipital, and one in the inferior border of the left parietal above the mastoid.

Burial 3 (Sex undetermined; Age 5 $\pm$ 1)

The cranium, although broken is in very good condition. The mandible is broken, but complete. The ribs, vertebrae, sternum, manubrium, clavicles and scapulae are all present in varying degrees of fragmentation. The plevis and sacrum are broken, with the sacrum barely represented. The long bones of the limbs which are relatively complete include both humeri, the femurs and the right tibia. The remainder (radii, ulnae, left tibia and fibulae) are all badly broken and/or fragmentary. Most of the hand and feet bones are absent, and those present are badly deteriorated. The individual is of insufficient age to enable a determination of sex.

The individual's age is derived from examination of the epiphyseal unions of the long bones (incomplete), the status of the endocranial closure of the frontal bones (still slightly visible) and the deciduous dentition. Formation of the permanent first molars is evident, but none have erupted thereby indicating an age of less than six.

The individual suffered traumatic lesion (puncture wound) of the frontal, measuring approximately 13 x 7 millimeters. The lesion penetrated the bony table leaving roughened edges on the endocranial surface. There is a slight indication of some resorptive activity on the exterior portion of the table edges, but remodeling

of the endocranial edges is not evident. The wound was probably the proximal cause of death.

Burial 4 (Female?; Adult)

The general condition of this skeleton is quite poor. The majority of the cranium is fragmented, and the mandible is broken. The long bones of the right side are present but broken, and the long bones of the left side were not recoverable because of their deteriorated condition. Most of the vertebral column, ribs and sacrum are present, but also badly crushed and fragmented. The pelvis is present but fragmented. Both hands are present, and portions of the tarsals and metatarsals also.

Determination of sex is doubtful. Due to the condition of the pelvis use of the greater sciatic notch for sex identification is impossible. The presence of relatively slight pre-aricular sulci would suggest that the individual was female. The absence of strong supraorbital ridges on the superior borders of the broken orbits also leads some support to the classification of female.

The condition of the skeleton is such that accurate age determination cannot be made. Clearly the individual was an adult as evidenced by the completion of epiphyseal unions, iliac superior crest and general appearance of the long bones.

The right ulna had been fractured at the mid-shaft with a substantial calculus forming on the anterior portion of the shaft. The articulating olecranon fossa shows a shallowness which undoubtedly is due to the elevated position in which the ulna and radius must have been carried subsequent to the fracture. The right radius has made some adaptation to the enlarged diameter of the ulna shaft by a slight curvature of the radial shaft towards the distal end.

From the portion of the mandible present the individual has suffered some pre-mortem loss of the anterior and posterior dentition. The vacated sockets had been resorbed, but there is evidence of severe peridontal disturbance which had begun erosion of the remaining right canine.

Burial 5 (Male?; Age 25 +)

Only the cranium and mandible are present* although both of these are badly fragmented. The cranium has been distorted by soil pressure. All teeth are present in the mandible and maxilla with the exception of pre-mortem loss of M^3. The loss of M^3 could only have been by a week at most prior to death as the edges of the socket display no resorption.

The individual is tentatively identified as male on the basis of relatively prominent nuchal crest, size of mastoids, squared mandibular symphysis and general appearance of the cranium.

Age determination was based upon the eruption of the permanent dentition combined with dental wear. The wear is not excessive and cusp patterns are clearly evident with little abrasion.

A large cavity is present in M_3 and two small cavities occur in ${}_2M$ and M_2. M^3 is absent as noted above, but this could have been lost during cataloging or pre-mortem immediately prior to death.

Burial 6 (Sex undetermined; Age 9)

The bones of this individual are in general well preserved although several are broken. The cranium and mandible are the most damaged of the inventory, and many of the phalanges of both the hands and feet are absent. All teeth of both deciduous and permanent eruption sequence are present. Due to the pre-pubescent age of the individual a determination of sex cannot be made with any certainty.

Judging from the degree of ossification of the long bones, vertebral formation, and dental eruption, the age of the skeleton is approximately 8-10 years of age. The presence of M_1 of the permanent dentition and the degree of crown completion of the M_2 and PM_1 (although not erupted) suggests that nine years may be more accurate.

The shafts of both humeri are slightly roughened and grooved suggesting a low grade osteomylytic infection. This infection is also observed on the right radius, and the shafts of both ulnae. There is no evidence of infection on any of the other long bones.

*The remainder of this skeleton was recovered and shipped but somehow got lost, perhaps in transit (J.R.A.).

Burial 7 (Probable Male; Age 39-44)

The majority of the skeleton is present with the exception of some of the carpals, metacarpals and phalanges of both hands, and some of the tarsals, metatarsals and phalanges of the feet. The dentition of the mandible is complete, but the maxilla is lacking PM^1, M^3, ^2PM, ^1M, ^2M, ^3M and I^2 pre-mortem. The pelvis is present, but is broken into several pieces. The vertebral column, ribs, clavicles, scapulae and sternum are all present although the ribs and protions of the vertebrae are partially broken. The long bones are in good shape for the most part, but several are broken.

The assignment of sex for this individual is not clear. The portions of the plevis examined suggests male characteristics, (greater sciatic notch, absence of pre-aricular sulci and obturator foramen configuration), but these are confounded by the appearance of the cranium, tooth size and estimated gonial angle. The male features of the pelvis are not without question, hence the lack of definite sex assignment. The absence of the pre-aricular sulci <u>may</u> be an argument for male assignment on the assumption that it is improbable that a female of advanced age would have not given birth.

The age of the individual is estimated from examination of the pubic symphyses (under assumption of male sex), vertebral condition (some arthritic lipping), general appearance of the ossification of the cranial sutures (not very reliable) and dental wear patterns.

The left humerus shaft displays evidence of periosteal infection which is also observed on the left radius to a lesser degree. The right radius, ulna and distal one third of the humerus all exhibit osteomylytic infection of the periosteal surface. The infection was sufficiently severe to result in some cortical swelling of the radius and a resultant bowing of the proximal one third of the ulna to allow for the pressure generated by the swelling of the radius. Although not noticeable on the carpals there is infection of the same type present on the second metacarpal of the right hand.

The right femur shows obvious flattening of the proximal shaft, and there is slight pathological involvement of an osteomylytic nature

at the distal shaft end. There is no distinctive indication of similar involvement on the left femur except for slight grooving of the distal one quarter of the shaft. The left fibula has visible infection along the entire shaft (not confirmed on the right fibula due to condition of the bone). The right tibia has severe osteomylytic infection of the periosteal surface resulting in ballooning of the cortical bone. The left tibia also exhibits a similar infection, but not sufficiently severe to cause massive swelling.

As mentioned previously, the dentition of the maxilla is missing several teeth pre-mortem. The malocclusion resulting from complete dentition of the mandible and partial dentition of the maxilla has produced severe wear upon the buccal sides of the maxillary tooth surfaces. Many of the teeth have been worn to the extent of dentine penetration. $_2M$ possessed one large cavity on the mesial side of the crown.

Pronounced arthritic lipping is evident upon most of the lumbar vertebrae as well as the lower thoracic. Although the form of the vertebrae is within normal for the apparent age, it is possible that the individual may have suffered some loss of mobility. Cervical vertebrae three and four are fused at both the articular surfaces as well as between the spinous processes.

A small aperature (5 mm in diameter) is noted in the inferior end of the sternal body. The aperture shows some signs of resorptive smoothing around the edges, but the aperture does not seem to have been the result of any traumatic injury, and most probably was developmental in nature.

Burial 8 (Female?; Age 20-25)

The cranium is fragmented on the left side, limiting observations of the right side and upper portions of the face. The mandible is broken, but all parts are present including the permanent dentition. Most of the bones are in good to fair condition with the exception of the vertebral column and ribs which are badly deteriorated. All of the

long bones are present* although most are broken. Most of the phalanges of both hands and feet are missing as is the sacrum. The carpals, metacarpals, tarsals and metatarsals are represented, but several are missing. Both patellae are present.** Although some of the long bones are broken, several were restored for measurements.***

The sex of the individual is probably female, but the generally poor condition of the pelvis precludes certainty on this characteristic alone even with a portion of the greater sciatic notch. The zygomatic arches do not extend past the external auditory meatus and the general appearance of the skull is somewhat gracile. Relatively, the teeth are small. The mandibular symphysis is rather pointed and the gonial angle (119^{o}), though less than that commonly reported for females, is still within the normal range.

The age determination is based upon the eruption of the third molars which evidence little wear. However, the front teeth are worn and the incisors (mandibular) are worn to the dentine, suggesting that the individual had malocclusion and/or that the third molars were not usually in opposition during mastication. The epiphyseal unions of the long bones suggest that the individual was in the early twenties and had reached osteologic adulthood.

Small caries are present on the occlusial surfaces of M_1, M_2, PM^2, ${}^1M$, and ${}^2PM$. There is some suggestion of spongy hyperostosis on the occipital bone leaving lesions of shallow and infrequent pits. It is unusual not to find this condition on the parietals as well, but it is possible that the condition was in the process of recession.

Burial 9 (Female; Age 23-27)

Much of the skeleton is fragmented and deteriorated. The cranium is greatly fragmented making reconstruction for cranial measurements

*Two right femurs were included in this burial (R.I.G.).

**Two right patellae were present. The smaller one of the two appeared to match the left patella (R.I.G.).

***This burial when excavated did not contain two right femurs and two right patellae; apparently a lab error occurred either before or after shipment for analysis. Perhaps the extra bones are part of the ones missing from Burial 5 (J.R.A.).

impossible. All of the long bones are broken, but some could be reassembled for measurements of length. Bones of the hands and feet are missing for the most part although some carpals and tarsals are present. Ribs, clavicles, scapulae and vertebrae are all in relatively poor condition from breakage and fragmentation. The mandible is broken, but all portions are present for sufficient measurements of the gonial angle, bicondylar width and height of ascending ramus. The pelvis is also fragmented, but sufficient portions are present for assistance with sex determination.

The individual appears to be female based upon the small mastoids, general size of the teeth, slender and reduced zygomatic arch and presence of a slight pre-auricular sulcus on the ilium. However, the right femoral head is rather large for a female. A portion of the greater sciatic notch of the left ilium is present, but in rather poor condition. An estimate of the angle suggests that it is broad in contrast to the more narrow angle typical of males. Although there are some male attributes the bulk of the information obtained tends to indicate a female.

Age of the individual is determined from the general condition of the teeth, epiphyseal closures of the long bones (complete), endocranial suture closures (not all that reliable) and eruption and subsequent premortem loss of the third molars of the left side of the maxilla and mandible. The dental wear is far from excessive, but sufficient to indicate that the individual was well past the time of third molar eruption, hence the age assignment of 23-27. With the exception of some pre-mortem tooth loss ($_2M$, $_3M$, M_3, ^3M and I^2) no other pathologies are evident.

Burial 10 (Female; Age 35 $\pm$ 3)

The cranium is fragmented and generally shattered. The facial portion is badly crushed on the left. The vertebrae are all in very poor condition and the ribs are quite deteriorated. All of the major bones are present with the exception of the sternum, xiphoid, manubrium, sacrum, coccyx and both patellae. Most of the hand and feet bones are present, but each extremity is lacking most of the phalanges. The

pelvis is broken and crushed to some extent, and lacks the pubic symphyses. The mandible is present although lacking most of the teeth pre-mortem.

The sex assignment of this individual is made on the basis of the mastoids (small), greater sciatic notch, gonial angle (projected), tooth size and absence of rounding of the supraorbital edges. Each of these characteristics is consistent with those normally attributed to females.

The age of the individual is established by epiphyseal unions (complete), dental wear and attrition and portions of the endo-cranial sutures suggesting closure of segments of the coronal suture at the bregma. The individual was approximately 35 years of age although considering the advanced stage of dental attrition it is possible that the age may be greater.

Aside from the pre-mortem loss and complete cavity resorption of the mandibular teeth (excepting C_1, PM_1 and ${}_1C$) and those of the maxilla (M^3, PM^1 and ${}^2I$) two other pathologies of interest are noted. The lamdoidal and sagittal sutures have a small inca bone protruding laterally on the left parietal. The protrusion is undoubtedly due to pressure of the ground upon the sutures after interment.

The left arm has suffered a severe separation of the ulna from the humerus. The ulna has moved to the lateral side of the capitulum and initiated a slight articular surface in the region. The area of articulation is extremely limited suggesting that the movement of the lower arm was very limited, and was probably carried in near vertical position relative to anatomical position of the humerus. The distal ends of the radius and ulna appear normal, but the radius has curved proximally to adjust to the new position of the ulna. The separation of the ulna from the humerus occurred well before death as the articular ends of the ulna and humerus do not display active bone remodeling. Although one can only conjecture about the cause of the deformity it definitely was of traumatic origin.

Burial 11 (Sex undetermined; Age 2-3)

The individual is badly fragmented. Some vertebral bodies are

present although missing transverse and spinous processes. No hands or feet were recovered, and most of the long bones are absent excepting portions of the humeri, radii and the right ulna. The clavicles, scapulae, sacrum and pelvis are not present, but small portions of ribs were recovered. The cranium/mandible is badly crushed. Because of the extremely young age of the individual determination of sex can not be made.

The age assignment is based upon the condition of the epiphyses of the left humerus and the distal end of the right radius, and the eruption of the deciduous dentition (I_2 and M_1) found in the mandibular fragment. No pathologies are noted.

Burial 12 (Male, Age approximately 50)

The individual is in fair condition. The cranium is crushed on the left side, especially the temporal and parietal bones. The maxilla is almost intact. Teeth present include I^1, ^1I, ^2I, and PM^1. The mandible is complete and contains all permanent dentition except for $_1I$, I_2 and I_1. The vertebrae, ribs, clavicles, scapulae and sternum are present in varying degrees of completeness. The ribs obviously have suffered the greater amount of breakage. The pelvis and sacrum are broken, but in sufficient condition for sex identification. Both humeri are present and in good condition excepting some erosion of the distal ends. The right ulna is complete, but the left ulna is fragmented. Both radii are in relatively poor condition. The right femur is in good condition with the medial epicondyle and a portion of the fovea capitis missing. The left femur is fragmented. The patellae are present, but relatively eroded on the apical points. The right fibula is fragmented excepting the shaft, and the left is missing both the proximal and distal ends. Both the right and left tibiae are in variable fragmented condition. Most of the right hand bones are present, but the left hand and portions of both feet are absent.

The sex of this individual is estimated from the greater sciatic notch, gonial angle, right zygomatic arch extension, and slight supraorbital ridges.

The age of the burial is established by the degree of closure of the endocranial sutures, condition of the vertebrae (arthritic lipping), trabecular involution of the femoral head (right) and general appearance of the skeleton taken in conjunction with dental attrition and wear.

There is slight scoliosis in the lumbar and thoracic regions. Bony masses (arthritic lipping and protrusion) are noted on the thoracic vertebrae (7-12) and all lumbar vertebrae, sacrum included. The right clavicle has a slight articular wear facet on the sternal extension which probably resulted from abrasive contact with the first rib.

The dentition is badly worn to the alveolar ridge of the maxilla. Most of the teeth exhibit at least one cavity and several molars have more.

A low grade periosteal infection (probably mild pyogenic octeomylytis) is noted on the fibulae, right femur and both tibiae. The infection has not resulted in noticable swelling of the bones.

Burial 13 (Female?; Age approximately 25)

Only fragments of the right portion of the maxilla, a few fragmented teeth and the right body of the mandible (missing both the ascending ramus and the symphysis) were recovered. PM_1, PM_2, M_1, M_2 and M_3 are present in the mandibular body.

Based solely upon the size of teeth and the configuration of the mandibular body this individual would appear to be a female. However, this is completely tentative. Age is determined from the condition of the teeth, and the eruption and surface wear of M_3. No pathologies are noted.

Burial 14 (Female; Age 16-18)

The skeleton is for the most part, completely shattered. The long bones are all broken and/or shattered with the exception of the left ulna which could be reassembled. The vertebrae are all unidentifiable fragments or pieces of transverse and spinous processess. Most of the carpals and tarsals were recovered, but phalanges and some of the metacarpals and metatarsals are absent. The cranium is shattered although

portions of the maxilla with the teeth could be restored. The mandible is broken and missing a portion of the left ascending ramus. All teeth are present except for the third molars which had failed to erupt. The pelvis is also shattered.

Such portions of the skull as are usable for sex include the mastoids, zygomatic arch extension (not past the external auditory meatus) and a portion of the left supraorbital edge. The pelvis although shattered does retain a small segment of the greater sciatic notch. Based upon these features the individual appears to be female. No male characteristics are noted although their absence could well be a result of the skeletal condition.

The age of the individual is based upon the lack of third molar eruption and status of epiphyseal union of the proximal end of the humeral heads, femoral distal ends and proximal tibiae. No pathologies are noted.

Burial 15 (Adult; Age and sex undetermined)

The skeleton is very fragmentary and deteriorated. The cranium, mandible, sternal body, and shoulder girdle complex are not present. The vertebrae are mostly crushed fragments, and the pelvis is shattered and lacks sciatic notches, ventral archea of the pubis, and pubic simphyses. The long bones are broken and many are fragmented. Very few bones of the hands were recovered and bones of the feet are completely absent.

There is insufficient skeletal material to make an accurate determination of sex. However, the head of the right femer and the condyles of the left femur are well within the female range.

Several of the epiphyseal unions are complete on the fragments of the long bones indicating definite osteological adulthood. The absence of teeth and vertebral material prevent further statements. No pathologies are noted.

Burial 16 (Sex undetermined; Age 20 ±)

The cranium is fragmented and the maxillary dentition has been shifted, probably from ground pressure. All teeth are present in the mandible except the left first and second molars and the right second

molar. The maxilla still retains all of the right dentition except for M^2 which had been lost pre-mortem and all of the left dentition with the exception of ^3M which is absent. The vertebrae are fragmented as are the ribs. Partial bones of the humeri and a fragment of the right humoral head are present. Broken portions of the radii and the ulnae are also present. The pelvis is shattered as is the sacrum. The lower limb bones are all in poor condition, and only portions of the distal extremities were recovered.

The remains are not complete enough to determine sex although from general appearance of the teeth (relatively small) it may be female. Age determination is based upon the eruption of the third molars and the lack of surface abrasion on them.

No pathologies are noted except for a slight roughness of the right fibula shaft possibly indicative of a low grade osteomylytic infection. The absence and/or poor condition of the other bones prevents confirmation.

Burial 17 (Male; Age 37 $\pm$ 3)

The cranium was still encased in dirt upon arrival. The left side of the upper face and portions of the temporal and parietal areas are broken, apparently the result of ground pressure. The mandible is in five pieces, but could be restored. All teeth of the mandible are present except for C_1, M_1, M_2, M_3, and all three molars on the left side. The maxillary teeth are present except for the front incisors which apparently became dislodged during transit as they are present with the remains. The long bones are present although most are broken with exception of the left ulna. The vertebral column, pelvis, sacrum (badly fragmented), clavicles, and ribs are mostly broken and deteriorated. Hand and feet bones were recovered although some of the manual phalanges are fragmented beyond recognition.

Sex determination is based upon general appearance of the cranium, extension of the zygomatic arch, squared chin of mandible, greater sciatic notch and overall size of long bones.

The age of the individual is estimated from the degree of dental wear, cranial suture closures and general appearance of the femurs

and tibias with regard to trabecular structure of the proximal ends.

Because of the absence of many of the mandibular molars (premortem) most of the masticatory force was absorbed by the anterior dentition resulting in severe wear of the teeth. The maxillary dentition, by virtue of having a greater number of teeth, displaced the force of mastication more evenly resulting in less wear of the maxillary dental surfaces. Both $_1PM$ and PM_1 display large carious lesions. M^1 and M^2 are fused by the roots on the buccal side which appears to have been developmental in origin rather than of some pathological (or stress force traumatic) cause. The left clavicle has suffered a slight trauma to the lateral anterior surface, however the calculus is in resorptive phase and the injury does not appear to have actually broken the bone, but rather may represent the osteologic response to a crack which was placed under stress by continued motion of the arm.

Burial 18 (Male; Age 25 $\pm$ 2)

The general condition of the burial is fair. The cranium and mandible are in good condition. The mandible is missing all molars and premolars from the left side. The long bones were recovered although most are broken. The vertebral column, pelvis, sacrum and ribs are relatively deteriorated and usually broken. Bones of the hands and feet are present except for a few matatarsals and phalanges.

Male characteristics present include extension of the posterior zygomatic arch past the external auditory meatus, large mastoids, large teeth, supraorbital ridges, pelvic configuration and size of long bones.

The age is determined by the eruption of the third molars, dental wear and attrition, the epiphyseal unions of long bones and the youthful imperfect endocranial closure of major cranial sutures. Although a precise estimate of age is not possible, the upper age limit is the more probable.

Pathologies of both infectious and traumatic origin are evident on the cranium. Caries and severe gum abscesses are apparent on the lower premolars although chronic mandibular infection did not result. The molars and premolars of the left side of the mandible had been

lost pre-mortem with complete resorption occurring. An infectious (probably pyogenic osteomylytis) is displayed on the right eye orbit and on the frontal immediately above the temporofrontal suture. A single circular opening, four millimeters in diameter, invades the bone interior in two divergent canals and into the frontal sinus. This may have been an active infection at the time of the individual's death. A traumatic wound is present on the top of the head, as evidenced by a small puncture measuring 8.5 x 5.5 x .2 millimeters deep, located on the left anterior parietal and at the juncture of the coronal and sagittal sutures. The puncture did not invade the lower bone table and has healed with no evidence of secondary infection.

Burial 20 (Male?; Age 20)

The cranium is in fragmented condition and exhibits complete maxillary dentition. The mandible is complete allowing for a gonial angle measurement (112^{0}). All long bones are broken, but present. The vertebral column, sacrum, pelvis, clavicles and scapulae are present in various portions, but none is complete or in good condition. The manubrium and sternum are absent. The carpals, metacarpals, tarsals, metatarsals and phalanges are not completely represented.

The assignment of male to this individual derives from the gonial angle, squared chin, general robustness of the long bones and tooth size.

The fragmented condition of the maxilla makes any true determination of root completion relatively difficult; yet judging from the complete eruption exhibited by the mandible of all permanent dentition an approximate age of 20 years is given. This age is further supported by the degree of epiphyseal union of the right humerus and the left femur. No pathologies are observed.

Burial 21 (Male; Age 35 $\pm$ 3)

The cranium is partially fragmented, but the mandible is complete. The vertebrae, pelvis, ribs, sacrum, clavicles, scapulae, patellae, tibiae, femurs and fibulae are all present, but in varying degrees of fragmentation and deterioration. The manubrium and sternum are absent as are a number of the phalanges. The carpals, metacarpals, tarsals and metatarsals are mostly present.

The sex of this individual is considered to be male based on the following: robustness of the long bones, supraorbital ridges, narrowness of the greater sciatic notch, size of teeth, zygomatic arch extension, and gonial angle (120^{o}).

The age of this individual is approximately 35 years estimated from the dental wear, epiphyseal unions of the proximal humerus (left) and proximal portions of the tibiae. The coronal suture is fused along both sides of the skull indicating that the individual was probably between 29 and late thirties.

A traumatic pathology is noted on the distal end of the right humerus. The pathology appears to have been the result of trauma to the elbow joint which temporarily dislocated the ulna from the olecranon fossa. The bones later returned to normal position, leaving disturbance to both the capitulum and the coronoid.

The dentition is markedly reduced by pre-mortem loss of the lateral incisors, $_{2}PM$, $_{1-3}M$, PM_2 and M_2. The maxilla displays no teeth, and the dental arcade has been completely resorbed. Several of the teeth exhibit cavities, mostly on the buccal surfaces, and there is evidence for severe peridontal infection, particularly of the maxilla.

Burial 22 (Male; Age 20-21)

The cranium is totally crushed. All teeth are accounted for from both the maxilla and the mandible although the mandible is fragmented also. The long bones are broken and relatively deteriorated, particularly at the articular ends. The vertebral column, ribs, sacrum, scapulae, clavicles and pelvis are fragmented, but in variable condition. The carpals, metacarpals, tarsals and metatarsals are partially present. Most of the phalanges of the feet are missing.

The sex is assigned on the basis of a partial greater sciatic notch (left), tooth size, mastoids and projected gonial angle.

The individual's age is derived from the condition of the third molars, which display very little wear (as did the other teeth) suggesting that the eruption of the third molars had not occurred long before death. Examination of the epiphyseal unions of some of the long bones (those not eroded) confirmed the age estimate.

No pathologies are noted excepting a small perforation of the sternal body. The perforation is approximately 3 mm in diameter, and appears to be developmental in nature.

Burial 23 (Male; Age 28-39)

The condition of this burial with the exception of the cranium (probably broken by ground pressure) is excellent. All bones excepting a few of the metartarsals from the left foot and some phalanges are present. Most of the long bones are intact, and the vertebral column is well preserved. The ribs, not surprisingly are fragmented as are portions of the scapulae and sternal body.

Sex assignment is made from examination of the supraorbital ridges, estimated gonial angle, tooth size, narrowness of the greater sciatic notch and general robustness of the long bones.

The age of the individual is somewhat difficult to determine due to the particular way in which the skull was broken. Many of the endocranial sutures appear to have begun fusion, but are not so closed as to correlate well with dental wear as an age criterion. Epiphyseal union of the long bones has occurred suggesting an age past the mid-twenties. Dental wear and attrition also tend to support a mid-thirties age for this individual.

The individual has suffered severe peridontal infection with the subsequent loss of PM_2 and M_1 on the right side and ${}_2I$, and ${}_{1-3}M$ on the left side of the mandible. Resorption has occurred at all cavity sites. Maxillary teeth are badly worn, but are present.

Burial 24 (Sex undetermined; Age 2)

The burial is extremely fragmentary, containing only three teeth (one incisor and two canines with incomplete roots), vertebral fragments, left radius and several phalanges. The individual is too young for sex identification to be possible. Age assignment is based upon the condition of the deciduous teeth and the epiphyseal cap of the radius. No pathologies are noted on this individual.

Burial 25 (Sex undetermined; Age 3-4)

The cranium is very fragmented as are the vertebrae, ribs, clavicles, and portions of the scapulae. The long bones are present, but

broken and only the right ulna is complete. The teeth are deciduous with the majority found in the mandible. The maxilla has only ^{2}M present. The individual is too young for sex assignment to be determined. Based upon the deciduous dentition present the child appears to be about 3-4 years of age. No pathologies are noted.

Burial 26 (Male?; Age 30 $\pm$ 3)

The condition of the skeleton is relatively poor. The cranium is badly fragmented and the mandible broken and partially crushed. The long bones present include shafts of the radii, a portion of the right ulna, portions of both humeri and a small fragment of the left femur. The ribs, vertebral column, scapulae and a portion of the left clavicle are mostly present as deteriorated segments and fragments. Very few bones of the limb extremities are present.

The individual is probably male based upon the robustness of the long bones, tooth size and pronounced musculature attachments on the long bones.

Age is estimated from the dental wear and general attrition, as well as by epiphyseal union observed on the left humerus proximal end.

The condition of the teeth (M^2, PM^2 and I^1 present) and pre-mortem loss of most of the others suggest peridontal infection with some resorption completed. No caries are noted.

Burial 27 (Sex undetermined; Age 1)

The individual is sparsely represented. Bone fragments present indlude the head of the left radius, the distal shaft portion of the right humerus, the distal shaft of the left fibula, fragments of the iliac crest, a few vertebral segments and unspecified ribs.

The individual is far too young for sex assigment to be estimated. Age determination is based upon the general state of the osteological development, and epiphyseal closure. No pathologies are noted.

Burial 28 (Sex undetermined; Age 12)

The cranium is fragmented as is the mandible. All teeth (28 erupted and four remaining in the maxilla and mandible) are present. The vertebral column, ribs, portions of the left ilium, and various phalanges are present, but in poor condition. Long bones present in

broken condition are the radii, distal shaft of the right femur, shaft of the left femur, shaft portions of the ulnae, tibiae and small fragments of the left humerus. The individual is insufficiently represented and of dubious age for accurate sexing.

The skeleton is approximately 12 years of age based upon the presence of the permanent dention (excepting the second molars and eruption of the third molars). The crowns have formed for the third molars, but the roots are not complete. No pathologies are noted.

Burial 29 (Sex undetermined; Age 2-3)

The cranium is in relatively good condition although it is broken in several places. The right ascending ramus is missing from the mandible. All dentition for this individual is present in the mandible and maxilla. Other bones present include various vertebrae, ribs, portions of the left and right superior ilium and pubic symphyses, left and right clavicle, right and left distal humeri and the proximal end of the left femur and complete right femur. The radii and portions of both ulnae are also present. Limb extremities are missing most of the phalanges, but some of the carpals, metacarpals, tarsals and metatarsals are represented. The individual is too young for sex assignment to be made accurately.

Age determination is based upon the initial calcification of the second permanent molar crowns and completion of root development of the deciduous molars. The presence of epiphyseal caps (to the femurs and humeri) also suggest a young age.

There are small cavities invading the exterior table of the frontal bone superior to the nasal/orbital border. These pits do not resemble spongy hyperostosis or osteomylytic infection. These lesions penetrated the bone table of the left sphenoid (greater wing), the left temporal, and the zygomatic arch both above and posterior to the external auditory meatus. Three carious lesions are also noted on the mandibular dentition.

Burial 30 (Sex undetermined; Age 1-2)

The first and second molars are present with incomplete roots and calcification of the second molar crown. The right and left mandibular

notches and superior fragments of the sphenoid are also present. Other fragments include portions of the frontal and parietal bones, the shaft of the left radius, various vertebrae and ribs. The individual is too young for accurate sex classification. Age determination is based upon the state of eruption and calcification of the deciduous dentition. No pathologies are observed.

Burial 31 (Sex undetermined; Infant)

The individual is represented by sparse fragments of the ribs and vertebrae. A proximal end of the left ulna and one other long bone fratment (ulna) complete the inventory. The individual is too young for accurate sex classification. The ossification of the proximal end of the left ulna indicates that the individual is probably a newborn, or at most a couple of months of age. No pathologies are observed.

Burial 32 (Female?; Age 35 ± 4)

The burial is in poor condition except for some of the long bones which have been restored. No cranial material is present, but there are several mandibular fragments with associated teeth (I_1, I_2, ${}_2I$, ${}_1PM$, PM_1, PM^2 and M^3. The pelvis is badly shattered providing little evidence for sexing. A small portion of the articular surface for the sacrum remains of the right ilium. The vertebrae are almost completely absent. Some unidentifiable rib fragments are also included. Of the long bones, only those of the lower extremities are present in usable condition (only fragments of the humeri, radii and ulnae badly broken and crushed represent the upper extremities). The left femur and left and right fibulae are partially restored. The bones of the left hand are most complete in number, and portions of the carpals, metacarpals, tarsals and metatarsals are present.

The sex of the individual is doubtful, but based upon the general size of the bones and teeth present in addition to the articular surface of the ilium a tentative assignment of female is made.

The age is derived from the dental wear of the teeth, plus the presence of the M^3 which assuredly indicates that the individual is adult. Epiphyseal union of the distal femur and general appearance of the bones suggest that the age was probably in the mid-thirties. With the exception of two caries on PM_1 no pathologies are observed.

<u>Burial 33 (Female; Age 40-50)</u>

The skeleton is quite fragmented. A portion of the mandible with one condyle and the mandibular symphysis is present. Teeth present include ^{1}I, ^{1}PM, PM^{2} (all separated from the maxilla) and M_2 remaining in the mandible. Of the vertebrae present, the axis is in perfect condition, the remaining portions of the vertebral column are badly crushed and lack spinous and transverse processes. Ribs, manubrium, scapulae and clavicles are fragmented. The pelvis is very fragmented, and a portion of the sacrum is present. Both humeri are present in fragmented condition as are the ulnae excepting the heads and styloid processes. The radii are represented by only the heads. The head of the left femur and one quarter of the right distal femur are present.

The sex is estimated from the width of the angle of the greater sciatic notch, the size of the teeth and the femoral head diameter.

The age of the individual is deduced primarily from the trabecular involution of the femoral head and neck which is relatively severe, and the condition of the teeth. The teeth show excessive wear and the enamel is completely worn from the superior surface of the incisor. No pathologies are noted, excepting the dental wear, and some arthritic lipping on the lumbar fragments.

<u>Burial 34 (Female; Age 30-40)</u>

The majority of the remains of the skeleton are very fragmentary. Cranial fragments are present as is a portion of the mandible. Teeth present in the mandible are M_1, PM_2 and C_1. Other teeth present, but separated include I_2, PM_1, $_{2}M$, M^{1} and ^{1}M. The third molars are present in the maxillary fragments. Five unidentifiable vertebral fragments of bodies are present. Most of the sternum is present as are the left humerus (fragmented) and the right humerus (relatively complete except for missing greater tubercle). The head of the left femur is also present. Other bone fragments in the inventory include ribs, scapulae and proximal end of the left radius and ulna.

The sex is based upon the size of the teeth and mandibular body, gracility of the zygomatic arch, femoral and humeral head diameters, and general appearance of the bones.

The age determination is based upon the condition of the teeth (quite worn, but cusps evident) and trabecular involution of the femoral head.

A small perforation opposite the fourth costal notch is present, but does not appear to have been of traumatic origin. An extra canine on the right side of the mandible remains unerupted due to C_1 and PM_1 blocking its eruption.

Burial 35 (Adult; Sex and Age undetermined)

The skeletal inventory for this burial contains cranial fragments, proximal portions of the right radius and ulna, head of the right femur, two middle row phalanges of the left hand, one left lunate, some rib fragments and eleven tabular portions of unspecified long bones. The material present is insufficient for determination of sex.

The individual is definitely adult, based upon the osteologic maturity of the radial shaft and ulna. The ramainder of the skeletal material is too sparse to be more specific. No pathologies are noted.

Burial 36 (Male; Age 35 $\pm$ 4)

The burial is in fair condition. The cranium is essentially complete, but the mandible is broken. The upper long bones are broken with the exception of the left humerus. The ribs, vertebrae, scapulae, clavicles and sacrum are all present in varying degrees of preservation. The manubrium, sternum and xiphoid process are present and fused. The lower limb bones are represented, but the tibiae and fibulae are badly broken and partially deteriorated. The patellae are present, but are deteriorated. The carpals, metacarpals, tarsals and metatarsals are also represented, but phalanges of all extremities are sparse in the inventory.

The sex of the individual appears to be male based upon gonial angle (115^{o}), tooth size, mastoids, slight representation of supraorbital ridges, zygomatic arch extension (left side) and the greater sciatic notch angle.

The age of this individual is estimated from the closure of the cranial sutures (coronal and sagittal), dental wear patterns (somewhat severe, but not excessive as the cusps are still evident), arthritic

lipping on the lumbar vertebrae (3-5) and the degree of trabecular involution of the femoral heads.

Although all permanent dentition is present for the maxilla, the mandible exhibits pathology in the form of abscesses which apparently caused the loss of both left and right pre-molars, the first two right molars and the first left molar. Resorption is complete for all but the second right molar.

Some arthritic lipping is present on the lumbar vertebrae (3-5) as well as general roughening of the superior edges of the sacrum. Two of the thoracic vertebrae appeared as though arthritic lipping might have been present, but the condition of the bones is such that it is difficult to be certain. A small incus bone is present in the superior border of the occipital.

Burial 37 (Sex undetermined; Age 35-40)

The cranium is completely shattered and crushed. Fragments of both femurs with distal ends absent, portions of the pelvis (badly crushed), and some tabular portions of other long bones are present. Teeth present from the permanent dentition include I^1, ${}^1I$, M^1, M^2, C_1, ${}_1I$, I_1, ${}_1PM$, PM_1, M_1, M_2, ${}_1M$ and M_2. The teeth are quite worn. The mandibular symphysis is present. Judging from the extreme dental wear relative to others of the population the individual appears to be approximately in the late thirties. Insufficient material is present for sex determination.

The teeth had several caries, but these were not particularly large and did not penetrate to sufficient depth to induce abscess. The small portion of the mandibular symphysis has a small circumscribed infectious lesion on the mid-body. The infection may be representative of an outgrowth of an abscess initiating from the root of the incisor.

Burial 39 (Sex undetermined; Age 3-4)

The individual is represented by several cranial fragments, a portion of the mandible (left side), ribs, vertebrae (fragmented and not ossified), parts of the right and left scapulae, portions of the clavicles and fragmented and/or deteriorated hand and feet bones. The humeri, radii and femurs are present in varying degrees of completion.

The fibulae and patellae are absent. The left ilium is the only portion of the pelvis remaining. The individual is of insufficient age for accurate sexing.

The age is based upon the degree of deciduous eruption. Teeth present include ${}_1I$, I_1, ${}_2I$, ${}_1C$ and M_2 in situ, and C_1, M_1 and ${}_2M$ separated. The deciduous incisors (central) of the maxilla are also present. Both second molars are just completing eruption indicating that the individual is probably in his third year. No pathologies are noted.

<u>Burial 40 (Female?; Age 40 ± 4)</u>

The skeleton is badly fragmented although the left scapula, sternal body and a large portion of the mandible are in excellent condition. Three of the incisors are present in a maxillary fragment. All permanent dentition is present in the mandible excepting M_2 (postmortem loss). Other bones present include proximal shaft and head of the right humerus, the head of the left humerus, shaft portion of the left radius, left clavicle and the left calcaneous. The vertebrae, ribs, right scapula, right clavicle and various tabular fragments of long bones complete the inventory except for a few phalanges.

The sex of the individual while not definite appears to be female as estimated from the size and configuration of the mandible, relatively pointed mandibular symphysis, small mastoids, and relatively smooth occipital.

The age of the individual is approximately 40 years. The dentition is worn, but cusp patterns are still visible. The epiphyseal unions of bones present are complete, but there is some involution of the trabeculae of the humeral head.

The medial end of the left clavicle displays a traumatic injury which prompted extensive trabecular swelling within the bone. The enlarged end also shows a slight groove on the inferior surface which appears to have been the original site of the injury. There is an abscess on M_3 resulting in some dislocation of the tooth orientation. M_2 has a small cavity on the buccal surface extending around to the mesial area.

Burial 41 (Sex undetermined; Age young adult)

No cranial bones are present. There are unspecified fragments of an ulna, head of the left femur, tabular fragments from a femur, and other fragments (unidentified) from femurs and tibiae. There is insufficient material present for sex identification.

The fragments present appear to be of osteologic maturity. The individual is an adult, probably relatively young (early twenties) as judged from the condition of the femoral head. No pathologies are present.

Burial 42 (Sex undetermined; Age 1)

The left ilium is present and complete. The right femur shaft is also complete, but the epiphyseal caps of both the proximal and distal ends are absent. There is insufficient material present for sex determination in addition to the extremely young age.

The age of the individual is estimated to be approximately one year based upon the epiphyseal scars of the distal end of the right femur. No pathologies are noted.

REFERENCES

Bass, W. M.
1971 Human osteology: A laboratory and field manual of the skeleton. Missouri Archaeological Society, Columbia.

Genoves, S. T.
1967 Long bone proportionality and its relation to stature in Mesoamerican populations. American Journal of Physical Anthropology, 26:67-78.

Krogman, W. M.
1962 The human skeleton in forensic medicine. C. C. Thomas, Springfield.

McKern, T. W.
1970 Estimation of skeletal age: From puberty to about 30 years of age. In personal identification in mass disasters, ed. T. D. Steward. National Museum of Natural History, Smithsonian Institution, Washington, 41-56.

McKern, T. W., and T. D. Steward
1957 Skeletal age changes in young American males, analyzed from the standpoint of identification. Technical Report EP-45. Headquarters Quartermaster Research and Development Command, Natick, Massachusetts.

Morrees, C. F. A., E. A. Fanning, and E. E. Hunt
1963 Age variation of formation stages for ten permanent teeth. Journal of Dental Research, 42:1490-1502.

Phenice, T. W.
1969 A newly developed visual method of sexing the os pubis. American Journal of Physical Anthropology, 30:297-302.

Steinbock, R. T.
1976 Paleopathological diagnosis and interpretation. C. C. Thomas, Springfield.

Todd, T. W.
1920 Age changes in the pubic bone: The male white pubis. American Journal of Physical Anthropology, 3:285-334.

APPENDIX B
KELLOGG FLORAL ANALYSIS

by

Cathy J. Crane

The identification of plant remains from an archaeological site can provide information about plant utilization and the season or seasons the site was occupied. Plant remains also give good indications of the local ecological conditions at the time the site was occupied. For Kellogg flotation offered the only significant means of recovering plant remains since a majority of the remains are extremely small and could not be recovered by standard excavation techniques.

Methodology

Flotation samples were taken from the features at Kellogg and an entire one meter square in each of the two excavation blocks was floated. All of the material recovered by flotation was analyzed.

In order to make the sorting of nutshell and seeds from charcoal easier, the dried plant remains were passed through graduated geological sieves. Each particle size was sorted under a binocular dissecting microscope at 5x magnification and identification was made by reference to seed manuals such as Martin and Barkley (1961), Musil (1963), and the U.S. Department of Agriculture Handbook No. 450 (1974). When possible comparisons were also made with modern seeds.

Seeds were identified to genus level and counted. Nutshell fragments and nut kernel fragements were also identified to genus and weighed. All unidentifiable seeds were counted and recorded. The tree genera represented by the wood charcoal were not identified.

At Kellogg only those seeds or nutshell fragments which were accidently or deliberately burned are likely to have been preserved since charcoal is more resistant to microbial action. Therefore, all

uncharred seeds found in the samples are probably modern contaminants, but they were also identified and recorded.

Kellogg Plant Remains

The most abundant and widely distributed plant material at Kellogg was charred hickory (*Carya* sp.) nutshell fragments. Approximately 404 grams of nutshell fragments were recovered, but the fragments were too small to determine the species of hickory utilized.

Ethnographic accounts show that the Southeastern Indian groups collected hickory nuts mainly for their oil. The nuts were ground, shell and all, and boiled in water. The oil was skimmed off the surface of the broth, and then the nut meats were collected by straining the broth and dried in cakes for storage. The nutshell fragments remained in the bottom of the pot and were often dumped into hearths and burned as fuel (Swanton 1946:365).

Acorns (*Quercus* sp.) are represented by approximately 32 grams of charred nutshell and 49.3 grams of kernels; a majority of these remains are from Features 45 and 108. The low quantity of acorn nutshell compared to hickory nutshell can be explained, at least in part, by the fact that the thin shell of the acorn is easily burned to ash. The species of acorns utilized could not be determined, but the different morphological characteristics of the acorn nutshell show that at least two different species were present in both Features 45 and 108. The acorns of black oaks are generally bitter and inedible unless the tannic acid has been removed. White oak acorns are usually less bitter, but palatability may vary greatly between trees of the same species in the same locality (Renfrew 1973:155).

Ethnographically acorns were also used by the Southeastern Indians as a source of oil and meal. The oil was extracted by boiling the meal, and the boiling process also leached out some of the tannic acid (Swanton 1946:366). In addition, Hariot in 1893 observed acorns being dried upon reed platforms over hot coals. Afterwards the parched acorns were pounded into meal which was made into bread or boiled to

extract the oil (Swanton 1946:273). The large quantity of charred acorn shell and kernels in Feature 108 suggests that the Kellogg inhabitants may have processed their acorns in this manner.

The third type of nutshell recovered from Kellogg is that of black walnut (Juglans sp.) which is represented by only 1.8 grams of burnt nutshell. These nuts were also used by the Southeastern Indians for oil and meal (Swanton 1946:366). In addition, one hophornbeam nut (Ostyra sp.) was recovered. Hophornbeam is a small tree, the bark of which was used for medicine (Banks 1953:30) but there appears to be no archaeological or ethnographical evidence for consumption of the tiny nuts.

Only a small number of charred seeds were recovered from Kellogg, and these include 12 persimmon seeds (Diospyros sp.) and two grape seeds (Vitis sp.). Persimmons were dried and made into cakes or bricks of "bread" throughout the Southeast (Swanton 1946:265), and grapes were eaten by most Southeastern groups (Swanton 1946:293).

The only domesticated plant remains at Kellogg were that of corn (Zea mays L.) which was recovered from 18 of the features. The variety of maize represented was not determined. The importance of maize to the Southeastern groups is well known, and it was used in various dishes such as corn bread, hominy and mush (Swanton 1946:353-354).

Most of the maize remains at Kellogg were cupules (cup on the cob which holds the kernel), and few kernels were recovered. Feature 65 was a large pit of burned corncobs (devoid of kernels) and nutshell, and several other pits (Table 15, main text)consisted of a combination of burned corncobs, pinecones and nutshells. The pinenuts found in these pits were immature, and therefore, it is unlikely that the pinecones were being gathered for the nuts. Most likely these features represent the smudge pits hypothesized by Binford (1967) to have been used for hide smoking and by Munson (1969) to have been used to smudge the interior of pots. It is interesting that several of these smudge pits (Features 59, 61, 62, 63, 64, and 116) occur in a tight cluster indicating an activity area.

These smudge pits differ from the features on Table 16 (main text) which may represent hearths and/or food processing areas. Feature 108 contained a large amount of burnt acorns, corn cupules and kernels. Feature 45 also appears to have been a pit used to roast acorns.

The flotation of an one meter square in each of the excavation blocks provided information on the distribution of plant materials within the midden (Tables 13-14, main text) Burnt hickory nutshell was found in all of the levels containing plant materials, and it was particularly abundant in Levels 2-6. Acorn nutshell was also common in Levels 2-6, but seeds only occasionally occurred.

The plant remains recovered from the other features are listed in Table 17 (main text). Many of these features are probably postholes which filled in with shell, bone, plant materials and lithics from the midden after the posts had decayed. For instance, the postholes of one structure at Kellogg (Feature 115A-K) were filled with varying amounts of nutshells, corncobs, seeds, shells, lithics and sherds. A shallow, basin-shaped pit (Feature 109) located inside this structure contained 2 grams of burnt hickory nutshell and 8.5 grams of wood charcoal. It is impossible to determine from the plant materials alone the function of the rest of the features listed in Table 17 but some of them may have been smudge pits.

Conclusion

At Kellogg flotation provided the most significant means for recovering prehistoric plant materials, and a major value of these remains is in providing dietary information. However, such plant remains constitute only a partial inventory of the prehistoric diet. In particular they represent foods that were accidently or deliberately burned. Uncharred plant materials including seeds, greens and tubers are unlikely to be preserved in open sites in temperate environments such as Kellogg. Due to this differential preservation, statements about the overall importance of a particular plant cannot be made. For instance, the flotation data suggests that hickory nuts constituted

a major part of the diet, but it is possible that in some groups acorns or domesticates were equally (or more) important. The domesticates *Phaseolus vulgaris* (common bean) and *Cucurbita pepo* (squash) do not preserve well, and consequently their absence at Kellogg does not necessarily mean that the people did not grow them.

A significant aspect of the flotation data from Mississippian features is the absence of several plants known to have been utilized by other groups. For example, flotation at the Gypsy Joint site in southeastern Missouri produced 1580 grams of nutshell (mostly hickory) and about 20,000 seeds. The plants from Gypsy Joint include wild foods such as hickory nuts (*Carya* sp.), acorns (*Quercus* sp.), walnuts (*Juglans* sp.), wild beans (*Strophostyles hevola*), and grapes (*Vitis* sp.); and cultivated foods such as maize (*Zea mays* L.), marsh elder (*Iva* sp.), sunflower (*Helianthus* sp.), knotweed (*Polygonum* sp.), and lamb's quarters (*Chenopodium* sp.) (Smith 1978:102-103). With the exception of maize, no evidence of these cultigens was found at Kellogg but they may have been utilized. Marsh elder and sunflowers were cultivated in the eastern woodlands by 2000 B.C. (Yarnell 1976:266). In addition to Gypsy Joint, evidence of the cultivation of these plants comes from sites such as Salts Cave, Mammoth Cave, Kettle Hill Cave, Newt Kash Hollow, Ozark Bluff Shelters, and Apple Creek (Struever and Vickery 1973:1205-1206). Other plants which are frequently recovered from Woodland and Mississippian sites and may have been cultivated include goosefoot (*Amaranthus* sp.), and canary grass (*Phalaris caroliniana*) (Struever and Vickery 1973:1207). Several factors could account for the absence of these cultigens at Kellogg: 1) the people did not grow them; 2) they were not preserved; or 3) some features (particularly hearths) containing these plants may not have been located. Due to the prevalence of these cultigens in other eastern sites, the last two possibilities seem more likely.

Plant remains recovered by flotation may also provide information about the season(s) the site was occupied. All of the remains from Kellogg suggest a summer (maize) to late fall (i.e. hickory nuts)

occupation. Since the people would have subsisted on stored foods during the winter to late spring, plant materials can seldom be used to determine occupation during these seasons.

Finally, plant remains combined with pollen and faunal analysis provide a means for studying the prehistoric ecology of a site. The plants recovered at Kellogg can all be found in the area today suggesting that the local ecological conditions have not changed significantly.

REFERENCES CITED

Banks, William H., Jr.
1953 Ethnobotany of the Cherokee Indians. M.A. thesis, Department of Botany, University of Tennessee, Knoxville.

Binford, Lewis R.
1967 Smudge pits and hide smoking: The use of analogy in archaeological reasoning. American Antiquity 32:1-12.

Martin, Alexander C., and W. D. Barkley
1961 Seed identification manual. University of Calfornia Press, Berkeley.

Munson, Patrick J.
1969 Comments on Binford's "Smudge pits and hide smoking: The use of analogy in archaeological reasoning." American Antiquity 34:83-84.

Musil, Albina F.
1963 Identification of crop and weed seeds. Agriculture Handbook No. 219. U.S. Department of Agriculture.

Renfrew, Jane M.
1973 Paleoethnobotany: The prehistoric food plants of the Near East and Europe. Columbia University Press, New York.

Smith, Bruce D.
1978 Prehistoric patterns of human behavior: A case study in the Mississippi Valley. Academic Press, New York.

Struever, Stuart, and Kent D. Vickery
1973 The beginnings of cultivation in the Midwest-riverine area of the United States. American Anthropologist 75:1197-1220.

Swanton, John R.
1946 The Indians of the Southeastern United States. Smithsonian Institution, Bureau of American Ethnology Bulletin 137.

U.S. Department of Agriculture
1974 Seeds of Woody Plants in the United States. Agriculture Handbook No. 450. Washington, D.C.

Yarnell, Richard A.
1976 Early plant husbandry in Eastern North America. In Cultural Change and Continuity. Academic Press, New York.

APPENDIX C
POLLEN FROM THE KELLOGG SITE (22C1527)
by
Suzanne K. Fish

The five samples from 22C1527 were processed according to a procedure described by P. J. Mehringer (1967:136-137) which includes both mechanical and chemical steps for the separation and concentration of pollen upon examination. In the case of the sample from Burial 19, a cremation, the lack of pollen may be related to the presence of fire. The absence of pollen in the other samples must be related to other conditions. It was particularly surprising that the control sample failed to yield pollen. The action of destructive microorganisms in the damp sample may be involved, but unsuccessful extractions of modern surface sediments are rather uncommon.

The single successful sample (Sample 3) contained pollen in fairly low amounts, but the condition of the grains was satisfactory. This sample was identified as being from a Middle Archaic level. The spectrum obtained from Sample 3 contains what appear to be riverine forest elements as well as some which are attributable to more open conditions.

A specialized riverine flora is most clearly represented by hackberry or sugarberry (Celtis); alder (Alnus); and willow (Salix). Pine (Pinus), oak (Quercus), hickory (Carya), elm (Ulmus), sweetgum (Liquidamber), and the palynologically indistinguishable pollen of hophornbeam and ironwood or blue beech (Ostra-carpinus) are also present. According to the modern vegetational description most of these trees would be found on deeper soils and in bottomland associations.

One prominent pollen type in Sample 3 is pine. While pine is the most numerous arboreal pollen type, it may not have been the dominant tree during the prehistoric period under examination. Pines are very prolific producers of pollen and their pollen is very widely transported in the air.

The pollen spectrum is fairly evenly divided between arboreal and

nonarboreal types. Such a distribution of types suggests a fairly open vegetational structure on the site. Grass and composite pollen are the main non-arboreal pollen types. Chenopods and amaranths (lumped palynologically as Cheno-ams), sure indicators of disturbed soil conditions, are infrequent, but many of the Composite family may also be weedy such as ragweed (Ambrosia), and related species.

The site is so close to the river that it would presumably have been wooded under any range of expectable environmental variation. The percentage of non-arboreal pollen seems high for a fairly closed canopy even though the surrounding regional vegetation included considerable prairie openings at first European contact. Either the wooded belt along the river was more restricted at the time of sample deposition or the site itself represents a clearing, possibly artificial, within the gallery of forest.

If the forest on the site were thin and bordered by prairie openings, the pollen spectrum we see could be a result. Presumably, this would indicate drier conditions than at present since the site map suggests woods occurring today all around the site. The pine may also be an indicator of drier conditions if it replaced some of the more specialized mesic species found along the river today. Notable in this respect is the absence of tupelo gum (Nyssa) in the spectrum. If this tree were an important part of the vegetation, at least traces of its pollen might be expected. The presence of juniper (Juniperus) pollen does not help to clarify the picture. Small amounts do not necessarily indicate the immediate presence of drier habitat cedars, since a few grains might be airborne additions.

Although the evidence could be more conclusive, the arboreal types present and the lack of Cheno-am pollen seem to fit best with a reconstruction of drier conditions, a thinner and more open gallery forest with fewer mesic species above the river bottom, and possibly even more pronounced prairie vegetation for the region than today. Such a situation is interesting in respect to the dating of the level containing Sample 3 at the Kellogg site. W. A. Watts (1969; 1971) documents a shift from oak to pine as the dominant type in the pollen

record of three lakes in southern Georgia and the upper portion of Florida. He interprets this as a drier to moister trend beginning somewhere between about 4,300 and 6,700 B.P. according to C14 dates. In view of Watt's data, the pollen sample from the Kellogg site would have been deposited before completion of the transition to a modern moister vegetation.

Only one pollen type seems a possible candidate for human use. Type 1 occurred in clumps, indicating direct presence of the plant rather than airborne transport. This type resembles the pollen of nightshade (*Solanum*), several species of which are edible. The grains are too large, however, to match available reference material for those species. This pollen type is almost surely from an herbaceous or shrubby plant, as it does not resemble any arboreal type likely to be present.

REFERENCES CITED

Mehringer, P. J.
1967 Pollen analysis of the Tule Springs site, Nevada. In Pleistocene Studies in Southern Nevada, edited by H. M. Wormington and D. Ellis. Nevada State Museum Anthropological Papers, No. 13.

Watts, W. A.
1969 A pollen diagram from Mud Lake, Marion County, north-central Florida. Geological Society of America, Bulletin 80: 631-642.

1971 Postglacial and interglacial vegetation history of southern Georgia and central Florida. Ecology, Vol 52: 676-690.

APPENDIX D
MUSSEL SHELLS FROM KELLOGG SITE FEATURES

by

Richard Rummel

Examination of specimens of bivalve mollusks (freshwater mussels) collected during this study resulted in the identification of 28 species. Presently, a total of 52 separate species are recorded in the literature for the Tombigbee River drainage (Corps of Engineers 1975; Birch 1975; Parmalee 1967; Williams and Stansbery 1972). Perhaps it should not be surprising that some genera such as *Anodonta*, *Leptodea*, and *Strophitus* were not represented in any of the collections. The shells of these genera are very thin and fragile, and considering the age of this material (800-2400 years), any of these genera that may have occurred in the sampled features were probably reduced to mere fragments or perhaps totally deteriorated by the forces at work on them. The majority of the material examined from the collection was composed of specimens of the thicker, heavier-shelled genera, such as *Quadrula*, *Amblema*, *Fusconaia*, *Elliptio*, and *Pleurobema*.

Interesting in this study was the large numbers of both *Pleurobema decisum* and *Epioblasma penita*. *Pleurobema decisum* comprised 53% (3,746 specimens) of the total number of specimens of all species (7,098), while *Epioblasma penita* comprised just over 7% (516 specimens). The interesting point being that both of these species are considered by some experts to be rare and endangered species today.

Conversely, some species common in the Tombigbee River today were noticably absent from the material examined. Chief among these is *Megalonaias nervosa* (=*gigantea*), a large, heavy-shelled species found quite readily on the Tombigbee River today. Others include *Plectomerus dombeyanus* and *Potamilus purpuratus*, as well as the scarcity of specimens of the genus *Lampsilis*.

The following table provides a list of the species identified in this study.

TABLE 1. MUSSEL SHELLS FROM FEATURES

Species	Late Gulf Formational Features		Miller II Features			Possible Miller II Features			Miller III Features												Mississippian Features																			
	78	136*	44	46	94	101	110	125	4	11	13	28	83	84	86	88	96	105	120	123	1	3	5	15	31	35	55	66	73	74	85	87	99	108	115a	115b	115c	115d	115e	115f
Amblema plicata				2		12		1		9		12		28		3			1	8	4	2	9	1			4	5		3	2									
Elliptio arctatus						1	12			1	1																													
Elliptio crassidens			18		2	94		13		38		4		176		1	6		9	36	35	2	47	3	20	5	27	62	3	4	6	2	5	1						
Elliptio arcus				9		180				34		33	1	78		3	2	8	11	22	33	4	39	2	2	2	14	106	4	5	15		9	3	1		1			
Elliptio Sp.			125																														4							
Epioblasma penita				2		62	6	3		29		82		32	2	2	6	7	4	15	35	6	34	1	2	1	12	55	6	6	8		3	1	3	2	1	2	1	6
Fusconaia ebena							1	5		7		3		19			2		1	5	6		9		8	1	3	2					1		2					
Fusconaia cerina						19				10		7		26		3	3		3	10	6		8			1	6	8		7			2		2		1		1	
Fusconaia Sp.			13				5															4					2		2									1		
Lampsilis teres																																								
Lampsilis straminea claibornensis						5						7		3						1							2	3					1							
Lampsilis ornata						7						8		2							1							1												
Lasmigona complanata																													1											
Ligumia recta						1																									1									
Obliquaria reflexa										1	1	2		8			2			5	2		3		1		3								1		1		1	
Obovaria jacksoniana								1		2																	3													
Obovaria unicolor	1					8	2			6		2		6			1		1	9	2		14					2			3					1				
Obovaria Sp.																											1													
Plagiola lineolata										2							1			2	1				1								1						1	1
Pleurobema decisum	6		5	12	42	279	29	20	4	220		364	2	550	4	19	68	27	46	267	244	51	299	11	42	8	189	230	37	62	26	7	62	5	19	6	10	7	6	20
Pleurobema perovatum						4				4		28																2												1
Pleurobema taitianum																								1																
Quadrula apiculata aspera																														1										
Quadrula aperata			1		5	39	2	16	1	29		47	2	227	5	2	9	1	5	41	11	2	42	3	10		25	12	2	3	3		8	1	9	2	1	2	4	5
Quadrula metanevra																												2					1							
Quadrula rumphiana						5								3				1							1															
Quadrula stapes						1				2		1		4					1	1													1							
Tritogonia verrucosa						1	1			1		2		7						3	1		3				1	5		1										
Truncilla donaciformis															1																									
Uniomerus tetralasmus																																								
Villosa lienosa						3						15																			2									
Total	[illegible]		162	25	53	720	58	39	5	395	2	617	5	1169	12	33	100	44	82	427	381	71	507	22	87	18	292	495	55	92	66	9	98	11	37	13	17	12	14	33

*All 69 grams of shell used for C^{14} date before analysis

TABLE 1. MUSSEL SHELLS FROM FEATURES (CONT.)

Species	Mississippian (cont.) 115g	115h	115k	117	119	121	122	124	135	Probable Mississippian 23	59	61	63	64	116	Post Archaic Features of Indeterminate Cultural Affiliation 6	7	8	9	10	14	16	22	23	24	27	30	36	37	40	41	43	45	47	48	54	56	58	67	71	80	81	82	90	95	97	98	107	109	113	114	118	141	Total
Amblema plicata		1								2						1			1	1	2										1					1		2			1													119
Elliptio arctatus									1																																													16
Elliptio crassidens	2	4		4	2											12			7				2			1	3								6			2				5	1	1						5		1	2	679
Elliptio arcus	1	2		6		1				1		2				15	6		18			4		1		1			1	3				3	1		1					4					1	1			3	1		698
Elliptio Sp.																																																						129
Epioblasma penita	2	6		10	3		1		1	2			1		2	19	1		7			1	1				2			1					3						2	7					2		2	2	1			516
Fusconaia ebena				2			1																			1								1	1															1				82
Fusconaia cerina				2	1											1			1																						1													129
Fusconaia Sp.	4	3																																												1								15
Lampsilis teres																																2																		1				3
Lampsilis straminea claibornensis		[illegible]																				1																				1								1				29
Lampsilis ornata																																																						19
Lasmigona complanata																																																						1
Ligumia recta																																																						2
Obliquaria reflexa	1			1						1																				1							1						1											37
Obovaria jacksoniana					2																																																	8
Obovaria unicolor		[illegible]								1						1												1							1															1				64
Obovaria Sp.																																																						1
Plagiola lineolata																																																		1				11
Pleurobema decisum	20	32	2	29	7	3	5	2		14	2		2			92	9	2	43		1	9	11		4		9		2	7	4	3	2	3	16	11	5	9	1	2	4	42	8		2		3	2		12	2	1		3746
Pleurobema perovatum				1																	1	1																																42
Pleurobema taitianum																																																						1
Quadrula apiculata aspera																																																						1
Quadrula asperata	4	16		7					1	3				1		7	1		8	1	1						2			1		1		1	2		2	3				5	2				3							645
Quadrula metanevra																1																																						4
Quadrula rumphiana																																																						16
Quadrula stapes																																																						[illegible]
Tritogonia verrucosa										1																																												27
Truncilla donaciformis				1																																1		1																[illegible]
Uniomerus tetralasmus																																			2																			2
Villosa lienosa																																																						[illegible]
Total	34	63	[illegible]	63	15	4	7	2	3	25	2	2	3	1	2	149	17	2	85	2	5	16	14	1	4	3	16	1	3	13	5	6	4	10	32	13	9	17	1	2	8	64	12	1	2	1	9	1	2	24	6	3	2	7098

REFERENCES CITED

Birch, J. B.

1975 Freshwater Unionocean clams of North America. EPA Identification Manual #11, Biota of freshwater Ecosystems.

Corps of Engineers

1975 A pre-impoundment study of Macrodentohs on the river section of the Tennessee-Tombigbee Waterway. Document #EE-COE-1862. Mobile District.

Parmalee, Paul W.

1967 The freshwater mussels of Illinois. Illinois State Museum, Popular Science Series, Vol. 8.

Williams, J. D., and David H. Stansbery

1972 A preliminary report on the Naiad Mollusks (Bavalvia; Naiadoida) of the Tombigbee River in the vicinity of Columbus, Mississippi. ASB Bulletin, Vol. 19, No. 2.

DATE
ILMED
-8